

GAO

Briefing Report to Congressional Requesters

March 1987

# FARM PAYMENTS

## Cost and Other Information on USDA's Commodity Certificates



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United States  
General Accounting Office  
Washington, D.C. 20548

Resources, Community, and  
Economic Development Division

B-226558

March 26, 1987

The Honorable Patrick J. Leahy  
Chairman, Committee on Agriculture,  
Nutrition, and Forestry  
United States Senate

The Honorable Jesse A. Helms  
United States Senate

On November 12, 1986, Senator Helms asked us to obtain information on the costs and uses of the U.S. Department of Agriculture's (USDA) commodity certificates. As a result of later discussions with Senator Helms's office, we have focused our review on (1) the costs to the government of issuing commodity certificates in lieu of cash payments and (2) issues surrounding the use of these certificates, including whether a provision permitting their use in exchange for substituted loan collateral has been foreclosed. Recently, we briefed your offices on the results of our work. This report elaborates on the information discussed at those briefings.

Through January 1987, USDA's Commodity Credit Corporation (CCC)<sup>1</sup> issued about \$5.5 billion in commodity certificates to farm program participants in lieu of a portion of their cash payments. About \$3 billion of these certificates have been exchanged, with the remainder outstanding. We estimate that the \$3 billion in exchanged certificates will increase CCC's net loan outlays by about \$3.1 billion to \$3.6 billion. Compared with the approximately \$3 billion in cash program payment outlays avoided by issuing certificates, this is a net increase in total CCC outlays of about \$107 million to \$653 million. However, as discussed below, while certificates have resulted in additional loan outlays, they have also created certain benefits for farmers, the grain industry, and the government.

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<sup>1</sup>USDA's farm programs are administered through CCC, a wholly owned government corporation acting within USDA. CCC has no operating staff; its day-to-day activities are carried out by USDA's Agricultural Stabilization and Conservation Service.

We have divided our report into six sections: (1) What are commodity certificates and how are they used? (2) How do certificates affect government costs? (3) How do certificates benefit the government? (4) How do certificates benefit farmers? (5) How do certificates benefit the grain industry? (6) Why have certificates traded at premiums? Each of these sections is discussed below.

#### COMMODITY CERTIFICATES AND THEIR USE

Commodity certificates are negotiable (ownership can be transferred), issued in dollar denominations, and, with certain exceptions, generic (not restricted to specific commodities). They provide several alternative uses to recipients. They can be (1) exchanged for crops under price-support loans, (2) exchanged for government-owned commodities, (3) sold to other interested parties, or (4) sold back to USDA for cash. When used in connection with crop loans, certificates are exchanged not at loan rates but at rates that generally reflect market prices, which may be considerably lower. To date, certificates have been used primarily in exchange for corn under price-support loans.

#### CERTIFICATES WILL INCREASE CCC LOAN OUTLAYS

The increase in CCC outlays attributed to certificates results from the ways in which certificates are used and their effects on CCC loan programs. When certificates are issued, outlays are initially reduced since certificates, unlike cash payments, are not treated as budgetary expenditures. However, when certificates are used, net loan outlays ultimately rise. This is because in a situation of excess supplies (currently the case for corn), additional grain brought onto the market through certificate exchanges tends to reduce prices. Although use may increase somewhat, the price decline causes other grain that would have been marketed to be put under loan, and grain under loan that would have become available to the market through cash loan repayment to be forfeited to the government.

On the basis of a range of assumptions concerning market conditions, certificate use to date, and how demand responds to price changes, we estimate that net loan outlays will rise more than the initial savings achieved by issuing certificates in lieu of cash payments. Our estimates are based on current market conditions. Were conditions to change (for example, if corn exports were to increase), these outlays could decline.

Our cost estimates relate only to loan outlays. There are other factors that also affect overall costs. Specifically, certificates will reduce short-term storage, transportation,

and handling costs to some extent. While these costs are difficult to quantify, we estimate that short-run storage savings could range from \$169 million to \$253 million.

#### BENEFITS OF CERTIFICATES TO THE GOVERNMENT

While certificates have resulted in additional net loan outlays, they have also had some benefits. We believe that they will reduce government inventory and loan stocks in the short run (as well as related storage, transportation, and handling costs). Further, certificate use has likely led to lower corn prices, which should enhance corn's competitiveness on world markets.

We also believe that certificates helped ease the storage shortage that USDA expected for the fall 1986 harvest. Certificates gave farmers a financial incentive to exchange certificates for corn under loan, enabling them to market corn that otherwise would have been forfeited and placed into government inventories.

#### CERTIFICATES HAVE INCREASED FARM INCOME

Certificates enable farmers to take out a price-support loan and immediately exchange certificates for the grain, thereby benefiting from the loan program while avoiding the costs of storing the loan collateral (i.e., grain). Without certificates, farmers would be obligated to store the loan collateral, at their expense, during the loan term (up to 9 months).

Farmers have also enhanced their incomes by selling their certificates at premiums, or prices exceeding their face value. Premiums have been as high as 35 percent over face value. Farmers who exchange certificates for their loan grain may realize benefits by marketing their grain at prices higher than the exchange values set by CCC. This is because while CCC attempts to set exchange rates to reflect market prices, it occasionally sets these rates below prevailing market prices.

#### GRAIN INDUSTRY HAS BENEFITED FROM CERTIFICATES

Certificates have given the grain industry easier access to CCC-owned grain at market prices. Thus, grain can be more readily obtained when and where needed. Certificates have also enabled grain companies, like farmers, to profit in certain instances where they can exchange certificates for

CCC-owned commodities that are worth more to them than the values established by CCC.

Finally, grain companies may profit by serving as intermediaries in trading certificates. One publicized situation, which Senator Helms asked us to review, involved a USDA provision allowing the use of certificates in exchange for substituted loan collateral. Under this provision, farmers substituted loan grain with grain bought in counties with large differentials between loan rates and the exchange values, thus maximizing profits. Reportedly, grain companies sold certificates at premiums to farmers wishing to take advantage of this provision. USDA disallowed this practice on October 31, 1986. As agreed, we will be issuing a separate report on this matter in the future.

#### CERTIFICATES HAVE TRADED AT PREMIUMS

Because of the benefits certificates provide (e.g., they allow farmers to benefit from the loan program without having to pay storage costs), farmers and others have been willing to buy them at premiums. In and of themselves, premiums paid for certificates do not cause government costs to increase.

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To obtain the requested information, we discussed certificate use and costs with officials responsible for farm programs in USDA, the Congressional Budget Office (CBO), and the Office of Management and Budget. We also met with representatives from six grain companies and an agricultural business consulting firm to discuss the effects of certificates on farmers and the grain industry. We obtained further information through interviews with USDA county executive directors in six top corn-producing and five top wheat-producing counties.

In addition, in formulating our certificate cost estimates, we reviewed and considered cost analyses prepared by USDA's Economic Analysis Staff, the Agricultural Stabilization and Conservation Service, and CBO. Our analysis of certificates' effects on loan outlays incorporated the most recent available USDA data on certificate use. These data include information on the amount of certificates issued and how certificates have been used (e.g., amount and value of commodities under loan and in government inventories exchanged for certificates).

As arranged with your offices, we did not obtain agency comments on this report. However, we discussed the information contained in this document with USDA officials responsible for administering farm programs.

As also arranged with your offices, we are sending copies of this report to the Secretary of Agriculture; the Administrator, Agricultural Stabilization and Conservation Service; the Director, Office of Management and Budget; and other interested parties. If you have further questions regarding the information contained in this report, please contact me at (202) 275-5138.

Major contributors to this report are listed in appendix II.

A handwritten signature in cursive script that reads "Brian P. Crowley". The signature is written in black ink and is positioned above the printed name and title.

Brian P. Crowley  
Senior Associate Director

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ABBREVIATIONS

ASCS	Agricultural Stabilization and Conservation Service
CBO	Congressional Budget Office
CCC	Commodity Credit Corporation
FOR	Farmer Owned Reserve
GAO	General Accounting Office
PCP	posted county price
RCED	Resources, Community, and Economic Development Division
USDA	U.S. Department of Agriculture

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**SECTION 1**

**WHAT ARE CERTIFICATES  
AND HOW ARE THEY USED?**

**SUMMARY**

- Since April 1986, commodity certificates have been paid to farm program participants in lieu of a portion of their cash payments. These certificates are negotiable (ownership can be transferred), generic (not restricted to specific commodities), and issued in dollar denominations.
- Certificates can be (1) exchanged for commodities under price-support loans, (2) exchanged for CCC-owned commodities, (3) sold back to USDA for cash, and (4) sold to other interested parties.
- Through January 1987, about \$5.5 billion in certificates have been issued; plans call for at least another \$1.8 billion to \$3.2 billion being issued by the end of the year. Through February, about \$3 billion of the \$5.5 billion in issued certificates have been used.

## **THE PURPOSE OF U.S. FARM PROGRAMS AND HOW THEY WORK**

To understand the costs and uses associated with commodity certificates, it is necessary to first understand the farm programs of which they are an integral part. The U.S. Department of Agriculture (USDA) administers farm programs through its Commodity Credit Corporation (CCC) and the Agricultural Stabilization and Conservation Service (ASCS). CCC, a wholly owned government corporation acting within USDA, has no operating staff. Its day-to-day activities are carried out by ASCS.

U.S. farm programs have two principal objectives: (1) to stabilize farm prices and (2) to stabilize and increase farm income. The main tools in carrying out these objectives are nonrecourse loans, farmer-owned reserve, deficiency payments, and reductions in planted acreage.

Nonrecourse loans are made to crop (corn and other feed grains, wheat, rice, and cotton) farmers at predetermined loan rates set by the Secretary of Agriculture and the Congress. The loan program serves several functions: it provides a source of credit to farmers in need of interim financing; helps even out marketings throughout the year; and acts as a floor under the market price--eligible farmers can always receive the loan price no matter how low the market price falls.

A farmer can obtain a loan on all of his/her eligible production. For most crops, the loan period is 9 months. The farmer receives a certain amount per unit of commodity put under loan. This per-unit amount is called the loan rate. Loan rates vary among crops and according to the location in which the loan is made. While the commodity is under loan, the farmer is responsible for storing it. If, when the loan matures, the farmer elects not to repay the loan (plus interest accrued), the government accepts the grain as full payment. The forfeited crops then become part of CCC's inventory. CCC thus acts as a permanent buyer in the market, committed to buying any eligible production at the prescribed loan rate.

Under the farmer-owned reserve program, the farmer contracts with the government to place his/her commodity (only wheat and feed grains are eligible for this program) into storage for 3 years. Before entering the farmer-owned reserve program, a farmer generally must have had the grain under a nonrecourse loan or have qualified for such a loan. Thus, in years when it is available, the farmer-owned reserve provides the farmer with an alternative to repaying or forfeiting his or her loan. In contrast to nonrecourse loans, under the farmer-owned reserve program, CCC pays for storage costs. Grain in the farmer-owned reserve cannot be sold, except with a financial penalty, until the market price reaches a

prescribed release price called a "trigger price". When the trigger price is reached, storage payments cease and farmers can repay loans without penalty. Interest is generally charged only for the first year of the loan.

Deficiency payments support the incomes of corn, feed grain, wheat, rice and cotton farmers when national average market prices for a specified period fall below prescribed target prices. These payments are made directly to farmers and are intended to guarantee certain minimum income levels. The maximum payment per unit of production (e.g., bushel of corn) is generally the difference between the target price and the national average market price farmers receive for the crop during the first 5 months of the marketing year.<sup>1</sup> The target price for corn in 1986 and 1987 is \$3.03 per bushel and for wheat, \$4.38 per bushel. For cotton and rice, the Food Security Act of 1985 provided that loan repayments could be made at rates reflective of world market prices (i.e., "marketing loans").

Reductions in planted acreage from predetermined production levels may be required of grain and cotton farmers who wish to qualify for the above programs. In addition, farmers may be offered voluntary acreage reduction ("paid diversion") programs in which they receive cash or in-kind payments as participation incentives. Basically, these programs have been used as a means of regulating supplies and increasing commodity prices. Traditionally, the assumption has been that a given percentage reduction in supplies will lead to a greater percentage increase in prices and thus improved gross farm receipts. However, in recent years this line of reasoning has been questioned.

For 1982-1985 crops, the total amount of deficiency plus diversion payments that one person could receive could not exceed \$50,000. As part of the 1987 continuing appropriations act (Public Law 99-591), a new \$250,000 per person, per year limit was placed on marketing loans and "Findley amendment" payments beginning with the 1987 crop year.<sup>2</sup> The previously existing annual limit on disaster payments of \$100,000 per person was also incorporated into this new limit starting in 1987.

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<sup>1</sup>If the national average price is less than the nonrecourse loan rate, deficiency payment rates are the difference between the target price and the loan rate.

<sup>2</sup>The Findley amendment refers to the section of the Agriculture and Food Act of 1981, which states that if the Secretary of Agriculture uses his discretionary authority to lower the loan rates for wheat or feed grains below the rates in effect for the 1982-85 crop programs, any increased payments attributable to the lowered amount would not be subject to the \$50,000 payment limitation.

## **WHAT ARE COMMODITY CERTIFICATES?**

Section 1005 of the Food Security Act of 1985 (Public Law 99-198) provided the Secretary of Agriculture with statutory authority to issue negotiable commodity certificates to make in-kind payments to eligible producers who chose to participate in government price- and income-support programs for wheat, feed grains, rice, and cotton.<sup>3</sup> The Secretary used this authority to issue commodity certificates for a portion of USDA's program payments. These certificates are issued in dollar amounts rather than in physical units (e.g., bushels). For example, in lieu of receiving a \$1,000 cash payment, a farmer receives a generic certificate that can be exchanged for \$1,000 in commodities. The exchange rates for the commodities will be discussed later in this section.

Certificates were first issued in April 1986, with most being issued in lieu of cash deficiency and diversion payments. Certificates are negotiable in that ownership can be transferred. Certificate holders have until the expiration date shown on the certificate to sell or transfer their certificates by endorsing them on the back. All generic certificates expire 8 months from the last day of the month in which they are issued. With certain exceptions, a certificate is generic in that it is not restricted to a specific commodity.<sup>4</sup> Certificates may be used by recipients in exchange for commodities under price-support loans or by subsequent certificate holders (i.e., those who have acquired certificates from the initial certificate recipients) in exchange for CCC-owned stock. Commodities in CCC inventory are available for certificate exchanges at values determined by ASCS. The values ASCS uses are based on current market prices.

## **ASCS'S OBJECTIVES FOR CERTIFICATES**

According to an ASCS briefing paper, there were five key objectives for certificates. These objectives are as follows:

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<sup>3</sup>Certificates are also being used to make in-kind payments for some other programs such as the Fuel Ethanol, the Export Enhancement, and the Targeted Export Assistance Programs. These programs involve subsidies to ethanol producers for purchasing grain (Fuel Ethanol), subsidies in-kind to U.S. grain exporters to expand sales in targeted foreign trade areas (Export Enhancement), and export assistance subsidies to offset the adverse effects on U.S. agricultural exports due to a subsidy, import quota, or other unfair trade practice of a foreign country (Targeted Export Assistance).

<sup>4</sup>A portion of certificates are limited to exchanges for cotton only.

- (1) Minimize cash outlays. (Issuing generic certificates in lieu of cash initially reduces outlays because only cash transactions are recorded as budgetary expenditures.)
- (2) Reduce burdensome CCC inventory and loan stocks. (Certificates enable CCC inventory and loan stocks to be exchanged for certificates at rates reflective of actual market prices. This provides an incentive to exchange certificates for loan commodities and CCC-owned stocks.)
- (3) Enhance U.S. competitiveness in world markets. (Certificates are widely believed to have resulted in lower corn prices. Lower prices enhance a commodity's competitiveness on the world market.)
- (4) Lower storage, handling, and interest costs of holding government program stocks. (Since commodities can be readily exchanged for certificates, CCC's stocks may decline, resulting in lower storage and handling costs on the remaining stocks.)
- (5) Permit easy access to all commodity stocks. (Any CCC-owned stock (except honey and sugar) listed in a CCC catalog can be exchanged for certificates. Without certificates, prices would have to rise above trigger prices before they could be purchased.)

In addition, USDA's Undersecretary for International Affairs and Commodity Programs, an important force behind USDA's decision to issue certificates, said that the need to alleviate tight storage conditions was a major purpose in issuing certificates. Certain areas of the country (the Corn Belt, in particular) were expected to have insufficient storage space for the fall 1986 harvest. Certificates were viewed as a way of "freeing up" commodities in areas of storage scarcity and allowing them to move to areas of greater storage availability. This could be done because farmers could exchange their certificates for 1985 loan grain, thus allowing grain to flow to the market and not be forfeited to CCC. Had the grain been forfeited, CCC would have been obliged to take possession and move the grain to approved storage facilities.

The Undersecretary expressed the belief that certificates would be less costly and simpler to administer than paying participant farmers in-kind with commodities. The last time USDA used a payment-in-kind program was in 1983-84. Under that program, farmers were paid in actual commodities, rather than in certificates, in return for idling cropland and reducing production of surplus commodities.

In addition, the Undersecretary stated that certificates gave farmers greater flexibility to make decisions regarding their crops. For example, prices below the loan rate ordinarily lead to loan forfeiture. With certificates, however, farmers have the option of exchanging certificates for their loan grain at market rates and then selling the crop or using it for feed. Furthermore, according to the Undersecretary, certificates provide farmers with at least as much cash as they would have received had their payments been made in cash.

#### HOW CAN CERTIFICATES BE USED?

As negotiable, dollar-denominated instruments, certificates provide considerable flexibility to certificate holders. Basically, certificates may be used in the following four ways:

1. Exchanged for commodities under price-support loans.
2. Exchanged for commodities held in CCC inventory (except for sugar and honey).
3. Sold back to CCC for cash.
4. Sold to other interested parties (e.g., farmers, grain companies).

#### Exchanges for loan commodities

Farmers can exchange certificates for crops under loan. As discussed previously, if a farmer obtains a price-support loan, he/she stores the commodities, which serve as loan collateral. Once the crops are under loan, the farmer can (1) repay the loan in cash, plus interest, at any time during the 9-month life of the loan, (2) forfeit the crop to the government when the loan matures, or (3) in certain years, convert wheat or feed grain loans to farmer-owned reserve loans. Certificates provide yet another option--they enable farmers to exchange certificates for loan commodities at the market price.

Since certificates are denominated in dollars rather than in physical units, ASCS must determine certificate prices for commodities exchanged for certificates. Therefore, ASCS has based redemption prices on a system of Posted County Prices (PCPs), which cover approximately 3,000 counties and 7,000 warehouse locations.

Each business day, ASCS issues sale prices for each of its 19 terminal markets based on closing prices the day before. PCPs are determined by adding or subtracting a predetermined differential

for that location.<sup>5</sup> Most counties are assigned two terminal markets with a differential assigned for each market. In calculating the local PCP, ASCS determines the closing prices for the two applicable terminal markets, applies the differential, and then takes the higher of the two values as the PCP.<sup>6</sup> Thus, certificate exchange prices reflect local market prices and not loan rates, although for some crops they may be similar. For example, in January 1987 the loan rate for corn was \$1.84 per bushel while the average market price was \$1.43 per bushel. For wheat in the same month, the loan rate was \$2.30 per bushel while the average market price was \$2.44 per bushel. For loans, the crops are valued the day they are exchanged for certificates.

#### Exchanges for CCC-owned commodities

Certificates can be exchanged for CCC-owned commodities at a price based on the PCP at the time of the exchange request.<sup>7</sup> In contrast to exchanges for loan commodities where the PCP is based on the market price at the close of the previous day, the value of CCC commodities exchanged for certificates is based on the PCP at the time of exchange. Thus, PCPs may change during the day as market prices change.

In addition, the certificate exchange price for CCC-owned commodities is adjusted to reflect in-handling charges CCC has already paid to the storing elevator. For example, because the CCC-determined in-handling charge for terminal warehouses for corn is 6 cents per bushel,<sup>8</sup> an additional 6 cents is added to the calculated PCP to arrive at the exchange price for CCC-owned corn.

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<sup>5</sup>Differentials are intended to reflect the factors (e.g., transportation costs) that determine the price local producers obtain for their commodities. Differentials are based on yearly averages and, according to ASCS officials, the differentials are monitored to ensure that they adequately reflect local prices.

<sup>6</sup>Prior to December 1, 1986, counties had been assigned one terminal market for calculating PCPs.

<sup>7</sup>Exchanges for CCC-owned commodities is restricted to subsequent certificate holders (those who obtain certificates from the original recipients). According to ASCS officials, this restriction was imposed in order to reduce the number of inventory exchange transactions, thereby easing ASCS's administrative burden.

<sup>8</sup>A terminal warehouse is one that has the ability to provide official weights and grades.

Commodities eligible for exchange are listed in CCC catalogs. The catalogs contain approximately 25 percent of the total CCC grain stored in each county warehouse and approximately 50 percent of the total CCC grain stored in each terminal warehouse. In addition, elevator operators can buy forfeited grain that was being stored in or delivered to their elevators for storage. Operators have 14 days after forfeiture to purchase the forfeited grain with generic certificates at the PCP.

#### Selling to CCC for cash

Initial holders of certificates may sell their certificates back to CCC after a certain period. Farmers who earned commodity certificates before November 17, 1986, could receive cash only during the 10 business days following a specific date on their certificate. October 1 to 14, 1986, was the earliest time period for which certificates could be returned for cash.<sup>9</sup> Farmers who earned certificates on or after November 17, 1986, are able to submit the certificate for cash during the last 3 months before the expiration date shown on their certificate. A subsequent certificate holder does not have the option of returning the certificate to CCC for cash.

#### Selling to other interested parties

A certificate holder may transfer or sell the certificate for cash by endorsing the certificate on the back. The transaction must be completed before the expiration date shown on the certificate. The certificates may be sold at whatever price the market will bear. Since certificates were first issued, premiums reportedly have been as high as 35 percent over face value. Certificate premiums in January and February 1987 were about 5 to 10 percent.

The premium that a certificate sells for is a function of supply and demand (see section 6). Supply is determined by the number of certificates CCC issues and how certificate recipients choose to use their certificates. Demand is determined primarily by the certificate's value derived from its alternative uses.

#### **HOW MANY CERTIFICATES HAVE BEEN ISSUED?**

CCC has issued approximately \$5.5 billion in certificates

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<sup>9</sup>Since certificates do not involve direct cash outlays, CCC has determined that the portion issued for 1986 payments were not subject to the 4.3 percent Gramm-Rudman-Hollings Act reductions. However, if certificate holders decide later to sell those certificates back to CCC for cash, CCC deducts 4.3 percent from the certificates' face values.

through January 1987. The amount of certificates issued by USDA program is shown in tables 1.1 and 1.2.

While about \$5.5 billion in certificates have actually been issued through January 1987, USDA has authorized issuance of an additional \$1.8 billion to \$3.2 billion in certificates through December 1987. In addition, 1986 final deficiency and 1987 final diversion payments are expected to total between \$5 billion and \$4.9 billion. USDA may decide to issue part of these payments in certificates as well.

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Table 1.1: Certificates for Deficiency and Diversion  
Payments as of 1/31/87

<u>Commodity</u>	<u>Deficiency</u>	<u>Diversion</u>
Wheat	\$1,815,615,401	\$211,490,735
Corn	1,344,254,193	186,610,489
Barley	126,603,199	7,681,362
Oats	15,236,138	1,785,622
Sorghum	107,959,576	15,688,708
Upland Cotton	171,286,660	--
Rice	56,010,285	--
<b>Total</b>	<b>\$3,636,965,452</b>	<b>\$423,256,916</b>

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Table 1.2: Amount of Certificates Issued

Deficiency Payments	\$3,636,965,452
Diversion Payments	423,256,916
Issued Ethanol Certificates (note a)	53,815,178
Issued Export Enhancement Certificates (note a)	96,038,308
Targeted Export Assistance Program (note a)	35,227,722
Others (note b)	<u>1,215,691,055</u>
<b>Total</b>	<b>\$5,460,994,631</b>

Note a: As of 2/6/87.

Note b: These include the Inventory Protection, Cotton First Handler Payment, Program and Nonprogram Disaster, Loan Deficiency Upland Cotton, Market Rice, Emergency Feed, and Conservation Reserve Programs.

Source: ASCS/USDA

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## HOW CERTIFICATES HAVE BEEN USED

According to ASCS, as of February 25, 1987, about \$3 billion in issued certificates have been exchanged. Approximately 68 percent of these certificates have been exchanged for corn and 20 percent for wheat. The remaining 12 percent have been exchanged for sorghum, barley, rice, soybeans, oats, and rye.<sup>10</sup> The single greatest use of certificates has been in exchanges for corn under price-support loans. Almost 1.2 billion bushels of corn under loan have been exchanged for certificates compared with about 194 million bushels of wheat. In contrast, certificates have been exchanged for about 79 million bushels of corn and 53 million bushels of wheat directly from CCC inventory. Table 1.3 provides a breakdown of certificate exchanges for crops from CCC inventories and producer loans.

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<sup>10</sup>These include exchanges for both crops under loans and crops from CCC inventory.

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**Table 1.3: Certificate Exchanges for CCC Inventory  
and Producer Loans as of 2/25/87**

<u>Commodity</u>	<u>CCC Inventory</u>	<u>Producer Loans (notes a &amp; b)</u>	<u>Total</u>
<b>WHEAT</b>			
Bushels	52,819,013	194,360,152	247,179,165
Value	\$125,173,970	\$460,607,468	\$585,781,438
<b>CORN</b>			
Bushels	79,036,099	1,175,077,375	1,254,113,474
Value	\$129,276,010	\$1,922,024,447	\$2,051,300,457
<b>SORGHUM</b>			
Bushels	22,469,935	61,931,905	84,401,840
Value	\$40,215,786	\$110,843,233	\$151,059,019
<b>RYE</b>			
Bushels	2,200,577	1,764,248	3,964,825
Value	\$3,119,417	\$2,500,901	\$5,620,318
<b>OATS</b>			
Bushels	346,684	1,263,864	1,610,548
Value	\$352,960	\$1,286,744	\$1,639,704
<b>BARLEY</b>			
Bushels	25,917,809	67,321,642	93,239,451
Value	\$31,671,996	\$82,268,172	\$113,940,168
<b>SOYBEANS</b>			
Bushels	482,881	2,460,872	2,943,753
Value	\$2,444,428	\$12,457,364	\$14,901,792
<b>ROUGH RICE</b>			
Hundredweight	25,227,716	18,305	25,246,021
Value	\$83,478,009	\$60,571	\$83,538,580
<b>UPLAND COTTON</b>			
Bales	--	4,619,705	4,619,705
Value	--	note c	note c
<b>HONEY (note c)</b>			
Hundredweight	--	1,618	1,618
Value	--	note c	note c
<b>TOTAL VALUE</b>	<u>\$415,732,576</u>	<u>\$2,592,048,900</u>	<u>\$3,007,781,476</u>

Note a: Data may lag 3-6 weeks.

Note b: ASCS has actual certificate values for CCC inventory exchanges only. ASCS bases overall certificate values on those exchanged for CCC inventory, which are typically higher than those exchanged for producer loan crops.

Note c: These amounts were not available from ASCS. ASCS no longer permits certificate exchanges for honey.

Source: ASCS/USDA

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SECTION 2

HOW DO CERTIFICATES AFFECT GOVERNMENT COSTS?

SUMMARY

- Certificates reduce cash outlays for certain farm program payments, but increase net cash outlays for CCC's price-support loans. The net budget impact of certificates therefore depends primarily on the relative size of these two effects on cash outlays.
  
- The precise increase in net loan outlays depends on how certificates are used, which in turn depends on existing market conditions for program commodities. Certificates increase farmers' returns from their price-support loans. On the basis of available data, we estimate that the \$3 billion in certificates exchanged through February 1987 will ultimately increase net loan outlays by about \$3.090 billion to \$3.636 billion. Compared to the reduction in cash payment outlays due to certificates of \$2.983 billion, this represents a net outlay increase of about \$107 million to \$653 million. However, this increase will be offset in part by short-term commodity storage-cost savings, which we estimate could be from \$169 million to \$253 million.
  
- Some of these outlay effects may not be observed until a future fiscal year. Certificates could also affect future outlays by (1) reducing CCC's long-term commodity storage costs and/or (2) increasing future farm program payments.
  
- Certificates are not treated as budget outlays, even though they ultimately have effects similar to outlays. The proper budget treatment of certificates is a complex and technical matter, but one that the Congress may wish to study further.

## HOW DO CERTIFICATES AFFECT GOVERNMENT COSTS?

### CERTIFICATES CAUSE SOME CCC CASH OUTLAYS TO RISE, OTHERS TO DECLINE

The outlay effects of certificates depend largely on how the certificates are used, which in turn depends on the market conditions prevailing for program commodities.

When CCC makes program payments to farmers and others with certificates in lieu of cash, cash outlays for program payments decline.<sup>1</sup> Generally, the decline is equal to the face value of the issued certificates. For example, the approximately \$5.5 billion in certificates CCC has issued means that cash outlays for program payments are about \$5.5 billion less than they would be without certificates.<sup>2</sup>

However, certificates cause net cash outlays for CCC's price-support loans to rise. This increase can arise from both direct and indirect certificate effects. (Generally, because certificates enable farmers to increase their returns from new nonrecourse loans, certificates increase the amount of loans made.) Therefore, the net effect on CCC's total cash outlays--either an increase or decrease--depends primarily on the extent to which the initial reduction in program payment outlays is offset by a subsequent increase in net loan outlays. CCC's total outlays are also affected by storage cost savings attributable to certificates.

### Certificates cause CCC's net loan outlays to increase in both direct and indirect ways

CCC's net loan outlays, for a given fiscal year, consist of the total cash loaned to farmers (gross loans), less the amount of cash repayments (the loans that farmers repay in cash). Net loan outlays rise when (1) there is an increase in gross loans, relative to repayments, or (2) there is a decrease in cash loan repayments, relative to loans made. Depending on how they are used, certificates can affect both the amount of gross loans made and the

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<sup>1</sup>In our view, certificates may raise a budgetary reporting issue. This is explained further at the end of this section.

<sup>2</sup>For payments that were made for 1986 crops, the face value of certificates exceeded the cash payments that certificates avoided by about 4.3 percent. This was because certificates, unlike cash payments, were not subject to reduction under the Balanced Budget and Deficit Control Act of 1985 (also known as Gramm-Rudman-Hollings, or GRH).

amount of cash repayments.<sup>3</sup> Further, the effects can be both direct and indirect, as discussed in the following sections.

#### Direct effects

CCC's net loans will be affected directly whenever farmers use certificates to obtain commodities under loan that, in the absence of certificates, they

- would not have placed under loan, and/or
- would have placed under loan but would have obtained by repaying the loans in cash.

When farmers use certificates to obtain commodities that they would otherwise not have placed under loan, net loan outlays rise directly: gross loans (to the certificate users) are increased, but there is no change in cash repayments (because certificates are exchanged for the loan crops). This action does not affect free stocks: because the crops are immediately exchanged, they are available to the market just as they would have been if they had not been placed under loan at all.

When farmers exchange certificates for crops under loans that they would otherwise have settled by cash repayment, net loan outlays rise directly for exactly the opposite reason: gross loans do not change (because the certificate users would have obtained their loans anyway), but the amount of cash repayments declines. There is no effect on free stocks: the crops become available to the market regardless of whether the loans are repaid in cash or the crops are exchanged for certificates.

#### Indirect effects

CCC's net loans can be affected indirectly by marketplace changes caused by certificates. These indirect effects can arise when

- farmers exchange certificates for crops under loans that, in the absence of certificates, they would have settled by forfeiting the crops to CCC, and/or
- grain companies or others exchange certificates for commodities from CCC-owned inventories when, in the absence of certificates, they would have purchased the commodities from free stocks.

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<sup>3</sup>The uses of PIK certificates are explained in section 1. Sections 4 and 5 discuss the incentives of farmers and grain companies, respectively, for each use of certificates.

These uses of certificates do not directly affect CCC's net loan outlays: neither the amount of cash loaned to the certificate users nor their cash loan repayments are changed. However, net loan outlays are affected indirectly. These uses of certificates cause an increase in free stocks: crops that would otherwise have been forfeited (and therefore owned by CCC), or that already are owned by CCC, become available to the market. The increase in free stocks causes the commodity price to fall. In turn, the price decline induces other farmers to (1) obtain loans that they would not have obtained had the price not fallen and (2) forfeit crops under loans that they would have repaid in cash. Thus certificates can indirectly cause net loan outlays to increase.

#### MEASURES FOR DETERMINING CERTIFICATES' EFFECT ON NET LOAN OUTLAYS

The overall effect of certificates on net loan outlays depends first on the total dollar amount of certificates issued. The greater the dollar amount of certificates issued, the more bushels of grain--either under loan to, or owned by, CCC--can be exchanged. Once a given dollar amount of certificates has been issued, the increase in net loan outlays depends on three important factors:

- the recycling percentage associated with each crop (this measure, further explained below, relates the increased number of bushels under loan due to certificates to the number of bushels exchanged with certificates);
- the average loan-rate-to-PCP ratio of each crop exchanged (this figure relates the total dollar amount of outstanding loans on crops exchanged for certificates to the total face value of certificates used); and
- the portion of certificates used in exchange for each crop.

These factors and their effects on net loan outlays are discussed in the following sections.

#### Recycling percentage

The recycling percentage is an important determinant of the net loan increase caused by certificates. As explained below, if all other things are equal, the lower the recycling percentage, the smaller the net loan increase caused by certificates.

"Recycling" is a measure of the additional volume (bushels) of commodities under loan because of certificates. The amount of recycling is the total of (1) the number of additional bushels placed under loan because of certificates and (2) the number of bushels that, in the absence of certificates, would have exited the loan program by farmers repaying their loans in cash.

The net effect of certificates on the volume of commodities under loan depends on how the net increase in bushels caused by certificates compares with the number of bushels exchanged for certificates. The ratio between these two factors is called the recycling percentage. Recycling is illustrated in example 2.1.<sup>4</sup>

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<sup>4</sup>The examples used in this report are for illustration and use hypothetical data.

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**Example 2.1**

The loan rate for corn in Fowler County is \$1.84 per bushel, and the PCP is \$1.50 per bushel. Farmer Brown, a dairy farmer, grows corn but usually doesn't place it under loan because it is needed to feed the cows. However, Farmer Brown can place the corn under loan and immediately exchange a \$1,500 certificate for it at the PCP, making it available to feed the cows as usual. Farmer Brown places 1,000 bushels of corn under loan and immediately exchanges it for the \$1,500 certificate (\$1,500 divided by \$1.50 = 1,000 bushels). Farmer Brown keeps the \$1,840 loan proceeds and feeds the corn to the dairy cows.

In this example, certificates have caused (1) a 1,000 bushel increase in corn under loan (because in the absence of certificates, Farmer Brown would not have taken out a loan), followed by (2) a 1,000 bushel decrease. Therefore, the recycling percentage is 100 (1,000 bushels additional under loan divided by 1,000 bushels exchanged with certificates equals 1.00, or 100 percent). The increase in outlays due to certificates is \$1,840 (1,000 bushels times loan rate of \$1.84 per bushel = \$1,840).

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When certificates are exchanged for loan crops that, in the absence of certificates (1) would not have been placed under loan (as in example 2.1) or (2) would have been settled by farmers repaying in cash, then the net increase in bushels under loan is exactly equal to the number of bushels exchanged with the certificates. In other words, if all certificates are always used in this way (and therefore there are no indirect effects), then the recycling percentage of all crops exchanged would always equal 100.

When certificates are used in exchange for (1) crops that would otherwise have been forfeited to CCC or (2) CCC-owned stocks, the recycling percentage can be less than 100. But, as noted above, these certificate uses can cause net loans to increase through indirect effects--increased free stocks followed by lower market prices, leading to increased loan placements or fewer cash loan repayments.

If the loan program works as designed to support prices, this indirect increase in net bushels under loan (corresponding to a decrease in free stocks) should cause the market price to rise toward its level before certificate use began. However, in the interim, the lower market price may lead to increased consumption (demand) for the commodity. In addition, the availability of certificates may cause farmers, grain companies, or others to carry more inventories of the commodities, irrespective of the price. These actions tend to reduce the bushel increase in net loans, and therefore the recycling percentage. This is illustrated in example 2.2.

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**Example 2.2**

Farmer Brown's neighbor, Farmer Green, also exchanges a \$1,500 certificate for 1,000 bushels of corn under loan, and markets it. With the relatively low market price (PCP), Farmer Green would have, in the absence of certificates, placed the corn under loan and then forfeited the corn to CCC. In this case, certificates have resulted in an additional 1,000 bushels of corn available to the marketplace, and the market price for corn declines somewhat. This price decline induces a farmer in a neighboring county to place an additional 900 bushels of corn under loan.

The recycling percentage in this case is 90 percent (900 bushels divided by 1,000 bushels = .90). If the loan rate for corn in the neighboring county is also \$1.84, then the increase in net loan outlays is \$1,656 (900 additional bushels placed under loan times \$1.84 per bushel = \$1,656). This is only 90 percent of the increased net loan outlays caused by certificates in the preceding example, when, with the same loan rate and PCP, the recycling percentage was 100 percent. Nonetheless, total CCC outlays are increased by \$156, because the \$1,500 reduction achieved by issuing the \$1,500 certificate has been more than offset by the \$1,656 additional loan outlay.

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For a given crop, the recycling percentage depends on (1) how much certificate use increases free stocks, (2) the extent to which increased free stocks lower prices, (3) how much demand increases as price decreases, and (4) possible changes in the quantity of free stocks held by farmers, grain companies, or others due to the availability of certificates. However, the price decline due to certificates affects not only the recycling percentage but also the PCP at which certificates are exchanged. Price declines lower the recycling percentage but raise the loan-rate-to-PCP ratio (see below). Because these effects oppose each other, price declines do not necessarily decrease net loan outlays.

Recycling can be less than 100 percent only if certificates are exchanged for crops that otherwise would have been forfeited or CCC-owned stocks. Therefore, the greater the proportion of certificates used for these purposes, the lower the recycling percentage will be. Our analysis of available data suggests that the recycling percentage associated with the \$3 billion of exchanged certificates most likely ranges from 90 to 100. This estimate is further detailed in appendix I.

#### Loan-rate-to-PCP ratio

The loan-rate-to-PCP ratio is an important determinant of the net loan increase caused by certificates. For a given level of recycling, the lower the average loan-rate-to-PCP ratio, the smaller the net loan increase caused by certificates.

For a single bushel placed under loan because of certificates, the loan-rate-to-PCP ratio is simply the loan rate at which the bushel is placed under loan divided by the PCP at which it was exchanged with a certificate. For example, a bushel of corn placed under loan at a loan rate of \$1.84 and exchanged at a PCP of \$1.50 would have a ratio of 1.23 ( $\$1.84 \div \$1.50 = 1.23$ ).

Similarly, for a given commodity, the average loan-rate-to-PCP ratio is the total loan value of the quantity exchanged with certificates, divided by the total dollar value of certificates used in exchange for that commodity. The total loan value is calculated by multiplying the applicable loan rate by the number of bushels exchanged for certificates.<sup>5</sup>

The relationship of the PCP to the loan rate at the time a certificate is used is an important factor affecting the increase in net loan outlays due to certificates. For a given crop, the

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<sup>5</sup>Certificates may be exchanged for any loan commodities. Although some certificates have been exchanged for 1985 and prior year crops, the bushel increase in CCC loans due to certificates occurred largely with 1986 crops. Therefore, we use 1986 loan rates to calculate average loan-rate-to-PCP ratios.

average loan-rate-to-PCP ratio for all bushels exchanged represents the increase in loan outlays that would result if the recycling percentage equals 100; that is, if the bushel increase in loans due to certificates exactly equaled the number of bushels exchanged with certificates. This relationship is further explained in example 2.3.

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### Example 2.3

In example 2.1, the PCP for corn in Fowler County was \$1.50 per bushel and the corn loan rate was \$1.84 per bushel. Thus, the loan value of corn that could be exchanged with a \$1,500 certificate was \$1,840 (1,000 bushels exchanged times the loan rate of \$1.84 per bushel). This means that each dollar's worth of certificates could be exchanged for a quantity of corn with a loan value of \$1.23. Stated another way, the ratio of the loan rate (the value placed on bushels when they are placed under loan) to the PCP (the value placed on bushels when they are exchanged with certificates) was 1.23 (\$1.84 loan rate divided by \$1.50 PCP = 1.23).

Farmer Brown exchanged a \$1,500 certificate for 1,000 bushels of corn under loan that would not have been placed under loan without certificates (a full 1,000 bushel increase in net loans, or 100 percent recycling). So, the increased net loan outlay was \$1,840 (the certificate value of \$1,500 x 1.23 = \$1,840.)

What if the PCP for corn in Fowler County had been \$1.40 per bushel instead of \$1.50? In that case, the loan-rate-to-PCP ratio would have been 1.31 (\$1.84 divided by \$1.40 = 1.31). With a \$1,500 certificate, Farmer Brown would have been able to exchange about 1,071 bushels (\$1,500 divided by \$1.40 = 1,071); therefore, instead of 1,000 bushels, Farmer Brown would place 1,071 bushels of corn under loan and then immediately exchange the certificate for them. The recycling percentage is still 100 (1,071 additional bushels under loan divided by 1,071 bushels exchanged with certificates.) However, the increased loan outlay would be \$1,971 (1,071 bushels x \$1.84 loan rate = \$1,971), or 1.31 times the certificate value of \$1,500.

In this situation, with the same level of recycling, the higher loan-rate-to-PCP ratio resulted in greater loan outlays (\$1,971) than did the lower loan-rate-to-PCP ratio (\$1,840).

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Comprehensive data are not available showing the actual average loan-rate-to-PCP ratio for crops exchanged with certificates to date. Our estimates, based on available market price and PCP data and discussions with ASCS officials, suggest that the average ratio for corn exchanged to date has been from about 1.19 to 1.27 (calculated using a national average corn loan rate of \$1.84 per bushel and estimated average PCP's of about \$1.45 to \$1.55 per bushel.) For wheat, we estimate the average loan-rate-to-PCP ratio has been from about 1.00 to 1.02 (calculated using a national average wheat loan rate of \$2.30 per bushel and estimated average PCP's of about \$2.25 to 2.30 per bushel). These estimates are further explained in appendix I.

Portion of certificates  
exchanged for each crop

Because loan-rate-to-PCP ratios vary among crops, the portion of certificates exchanged for each particular crop determines the aggregate average loan-rate-to-PCP ratio for all crops exchanged.

For a given crop, the lower the PCP relative to the loan rate, the higher the loan-rate-to-PCP ratio. If the loan-rate-to-PCP ratio is the same for all crops, the aggregate loan value of the crop exchanged per dollar of certificate use will be the same regardless of which crop is exchanged. Continuing example 2.3, if the loan-rate-to-PCP ratio for wheat was also 1.23, then the aggregate loan value of wheat exchanged with certificates of given face value would be the same as the aggregate loan value of corn. If, in addition, the recycling percentages of all crops were 100, then the increase in net lending outlays would be the same regardless of which crop was exchanged.

However, as discussed above, the loan-rate-to-PCP ratios vary among commodities. For example, available data show that since September 1986 this ratio has been higher for corn than for wheat (that is, the average PCP has been much lower, relative to the average loan rate, for corn than for wheat). This means that the loan value of corn exchanged with a given certificate value has been higher than that of wheat. Therefore, net loan outlays will also be higher if more certificates were exchanged for corn than wheat (assuming that the recycling percentages are equal).

Available data suggest that about 68 percent of the face value of certificates exchanged has been exchanged for corn. About 20 percent has been exchanged for wheat, and about 12 percent other commodities.

**CERTIFICATES USED THROUGH FEBRUARY 1987**  
**WILL LIKELY INCREASE CCC NET LOAN OUTLAYS**  
**BY MORE THAN PROGRAM PAYMENT OUTLAYS DECLINED**

For the \$3 billion in certificates exchanged through February 1987, we estimate increased CCC net loan outlays of about \$3.090 billion to \$3.636 billion. Compared to the reduction in cash program payment outlays due to certificates of an estimated \$2.983 billion, this implies a net increase of about \$107 million to \$653 million. However, this increase will be offset in part by short-run storage cost savings. Using certain assumptions, we estimate that these savings could be from \$169 to \$253 million. These and other outlay effects may not be immediate. The methodology underlying our estimates is detailed in app. I.

**Net loan outlays will increase**

Using a distribution of about 68 percent corn, 20 percent wheat, and 12 percent other commodities, and the above loan-rate-to-PCP ratios, we estimate an aggregate loan-rate-to-PCP ratio of about 1.14 to 1.21.<sup>6</sup> Table 2.1 shows the increase in loan outlays per \$1,000 of certificate use for this range of aggregate loan-rate-to-PCP ratios and the recycling percentages we believe most probable.

The table shows that net loan outlays are likely to rise by \$1,030 to \$1,212 per \$1,000 of certificates used. This implies a total outlay increase equal to about 3 percent to 21 percent of the face value of certificates issued (assuming they are all used). Factoring in the GRH reduction applicable to crop-year 1986 payments, we estimate that the \$3 billion in certificates exchanged through February 1987 reduced program payment cash outlays by about \$2.983 billion. The total effect of our estimated increase in net loan outlays is therefore an increase in total CCC outlays of about \$107 million to \$653 million.

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<sup>6</sup>As explained in app. I, for our calculations we allocated the 12 percent of other commodities between corn and wheat.

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Table 2.1: Increase in Net Loan  
Outlays Resulting from Use of a  
\$1,000 Certificate (in dollars)  
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<u>Recycling</u> <u>Percentage</u>	<u>Loan-Rate-to-PCP ratio</u>	
	<u>1.144</u>	<u>1.212</u>
100	1,144	1,212
90	1,030	1,091

Source: GAO computations.

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This range is based on certificate exchanges that have already occurred. The increase in total outlays per dollar of certificates issued, once all the certificates already issued are exchanged, may be either higher or lower than what we have calculated (see app. I).

#### Certificates also reduce short-run storage costs

Although certificates affect outlays primarily through their effects on cash program payments (for which they are substituted) and net loans, they also affect short-run storage costs. Certificates reduce short-run storage costs when they are (1) exchanged for CCC-owned inventory, (2) exchanged for crops under outstanding farmer owned reserve (FOR) loans, or (3) exchanged for crops under regular 9-month loans that farmers, in the absence of certificates, would have forfeited to CCC.

Although these reductions of stocks with certificates may lead to CCC's acquisition of an equal amount of grain (beyond what it would have acquired without certificates), there can be a span of several months between the exchanges and the induced forfeitures. For example, certificates could be exchanged for crops under 1985 and prior-year loans, and in exchange for CCC-owned inventory, beginning in June 1986. Regular loans for 1986 crops will not mature--and therefore farmers cannot forfeit the crops--until 9 months after the loan was made, generally beginning in March 1987. During this time CCC's storage costs will be reduced even if in the long run monthly storage costs return to the level they would be without certificates.

It is difficult to estimate the amount of storage costs avoided because (1) it is not known with certainty how much of the 1985 and prior-year crops, in the absence of certificates, would have been forfeited to CCC, (2) if the forfeitures occurred, how CCC would have handled storage problems in areas such as the Corn Belt where available storage was limited, (3) the average time span of avoided storage (the time span between the point when bushels exit CCC inventory through certificate exchanges and the point when corresponding bushels enter CCC inventory as a result of certificates), and (4) the amount of time that CCC-owned commodities, exchanged for certificates, would have remained in CCC inventory in the absence of certificates. Using estimates of these variables, we estimate short-run storage savings of \$169 million to \$253 million. However, because these values are based on certain assumptions, the actual storage savings could be more or less than these amounts. The basis for these estimates is in appendix I.

Some outlays effects may not  
be observed until future fiscal years

Certificates could affect future fiscal year outlays by (1) shifting outlays from one year to the next, (2) reducing long-run CCC storage costs, and/or (3) increasing future deficiency and diversion payments.

In the long run, CCC storage costs will be reduced if CCC stocks are reduced. Unless producers, grain companies or others increase their preferred holdings of free stocks, this will happen only to the extent that use increases due to price reductions. While it is not possible to precisely estimate these savings, we do not believe they will be large.

For reasons discussed above, we believe that the recycling percentage associated with exchanged certificates is probably at least 90. (This means that, for every 100 bushels of grain exiting CCC's loan program through certificate exchanges, at least another 90 bushels will be placed under loan; the 90 or more bushels will likely be forfeited to CCC because market conditions have changed only enough to absorb the difference of 10 or fewer bushels. Therefore, the net reduction in CCC's inventory will be 10 bushels or less.) For crops for which certificate use does not reduce prices, 100 percent recycling is more likely and, therefore, no change in long-run inventory--and storage costs--will occur.<sup>7</sup>

Substitution of certificates for cash payments can affect the timing of USDA outlays, sometimes shifting outlays from one year to the next. Two factors can account for this shift: (1) certificates are not always used immediately after issuance, and (2) net lending outlay increases resulting from certificate use do not always occur immediately after certificate use.

When certificates are issued instead of cash payments, outlays are immediately less than they would have been otherwise. This is because certificate issuances, unlike cash payments, are not treated as outlays (cash expenditures). Most of the offsetting increase in loan outlays will not occur before the certificates are exchanged with CCC, no matter how many times they are traded among holders. If certificates are not exchanged until the fiscal year following the year of issuance, then most increased net loan

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<sup>7</sup>An ASCS analysis states that USDA will save \$300 million to \$500 million in storage and transportation costs during fiscal years 1986 and 1987 because of reduced 1985-crop loan forfeitures due to certificates. However, this estimate does not account for recycling. As previously discussed, certificates reduce loan grain through redemptions, but indirectly cause an increase in the number of bushels under loan. As a result, in the long run CCC's inventory of forfeited crops may decline only slightly, if at all.

outlays resulting immediately from the exchanges will not occur until the year following the year in which certificates lowered cash payment outlays. Consequently, even if the loan outlay increase equals the decline in cash payments--that is, no effect on total outlays--there will be a shift of outlays from one year to the next.

As discussed previously, some uses of certificates cause direct and immediate increases of net lending outlays, while other uses cause net lending outlays to increase indirectly as a result of marketplace changes (and by producers other than those actually using the certificates). Because the indirect effects arise from price declines caused by certificate use, there may be a lag between certificate use and increased net loan outlays. This lag is in addition to the lag between certificate issuance and certificate use, and increases the likelihood that substitution of certificates for cash payments will result in a shift of outlays from one year to the next.

Future deficiency and diversion payments may also increase due to certificates. Because certificates are more valuable to producers than cash payments of equal face value (as explained in section 5), they should have an effect similar to an increase in cash payment rates. Thus, an expectation of future certificate availability may induce more farmers to participate in USDA's price support program. If program participation rises due to certificates, future deficiency and diversion payments may rise. This implies also that future issuances of certificates instead of cash payments would be larger, which, if market conditions remain the same, means even more increased outlays. However, because for most crops participation rates are already very high, there is limited potential for certificate use to increase participation further.

#### POTENTIAL BUDGETARY REPORTING ISSUE

Under current budgetary reporting procedures, certificate amounts are not included in the budget's outlay totals at the time of issuance, even though they ultimately have outlay-like effects. This may lessen the usefulness of the budget and its reported outlay amounts to the Congress in its budget-related deliberations and actions. The proper budget treatment of certificates is a complex and technical matter, but one that the Congress may wish to study further.

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**SECTION 3**

**HOW DO CERTIFICATES BENEFIT THE GOVERNMENT?**

**SUMMARY**

- ASCS identified five objectives for certificates:  
(1) minimize cash outlays, (2) reduce CCC inventory and loan stocks, (3) enhance market competitiveness, (4) lower storage and handling costs, and (5) permit easy access to commodity stocks.
  
- We believe that all but the first objective have been met to varying degrees. Specifically, certificates have enhanced the market competitiveness of corn and given the grain industry easy access to commodity stocks. In addition, certificates may, in the short term, reduce inventory and loan stocks as well as related storage and handling costs.
  
- However, as discussed in section 2, while initial cash outlays are reduced (since certificates issued instead of cash payments are not counted as expenditures), certificate use has resulted in additional loan program outlays. Therefore, certificates' effects on total outlays are uncertain.

**EXTENT TO WHICH CERTIFICATES HAVE  
MET ASCS'S STATED OBJECTIVES**

Almost a year has passed since the first certificates were issued, and although more time is needed to fully assess the effects of certificates, we believe some preliminary judgments can be made regarding the extent to which the five objectives discussed in section 1 are being met. Following is our analysis of how certificates are meeting these five objectives.

(1) Minimize cash outlays--Issuing generic certificates in lieu of cash initially reduces outlays because only cash transactions are recorded for purposes of measuring spending. However, use of certificates under current market conditions ultimately increases loan program costs. That is, for each certificate exchanged, grain that in the absence of certificates would have been marketed will come into the loan program, or loans that would have been repaid in cash will be forfeited.

Because increased loan placements and reduced repayments occur in response to price declines caused by certificate use, some time may elapse between certificate use and increased loan program costs. Thus, there is the possibility that the increased costs brought on by certificate use may not be observed until a future fiscal year. These net increased costs are diminished to the extent to which demand (usage) increases and/or holding of free stocks by the grain industry increases. In addition, there are other factors that, to some extent, affect overall costs. Specifically, as discussed in section 2, certificates will reduce short-term transportation, handling, and storage costs. While these costs are difficult to quantify, we estimate that short-run storage and handling savings could range from \$169 to \$253 million.

Further, although there is an initial budgetary reduction in outlays, certificates are being used primarily in exchange for a CCC asset--grain. As discussed in section 2 and below, even after all induced effects occur, this may lead to a small reduction in CCC's grain inventory. To the extent that inventory is reduced, there will also be a reduction in potential future revenues from inventory sales.

(2) Reduce burdensome CCC inventory and loan stocks--When certificates are exchanged for grain from CCC inventory or grain under loan, CCC is initially left with less inventory and loan stocks. However, as described above, certificate exchanges eventually result in additional grain coming into the loan program. We estimate that for every 100 bushels of grain from CCC inventory exchanged for certificates, at least another 90 bushels will ultimately enter the inventory. As a result, we believe it is likely that certificates have reduced CCC inventory and loan stocks to some extent, perhaps as much as 10 percent of the volume of grain exchanged for certificates.

(3) Enhance market competitiveness--Many observers believe that certificates have resulted in lower corn prices. The precise effects of certificates on prices are difficult to estimate because there are many other factors affecting market prices. However, an ASCS commodity analyst estimated that certificates have caused corn prices to decline at least 10 cents a bushel. USDA's Economic Analysis Staff estimated that the December 1986 issuance of certificates, involving about \$1.3 billion, would result in annual average corn prices an estimated 2 to 6 cents lower than if the \$1.3 billion were not paid in certificates. Several industry representatives also told us that they believed that certificates have resulted in lower corn prices.

To the extent that prices are lowered, crops will become more competitive on the world market. An ASCS commodity analyst stated that U.S. corn prices were now competitive with world prices. Nevertheless, he said that as of February 1987 there had been no increase in corn export projections in the past year--the export demand just was not there. He added, however, that it usually took several years to see the effects of increased export demand. He also noted that domestic use of corn had increased slightly.

(4) Lower storage, handling, and interest costs--As discussed above, we believe that there will be a short-term decrease in CCC inventory and loan stocks. Consequently, the associated short-term storage and handling costs will also be lowered to some extent. These are short-term savings in that it can take several months between the time certificates are exchanged and the resulting forfeitures brought on by additional grain on the market and/or lower prices. Ultimately, CCC's storage and handling costs may rise to the level they would be without certificates.

(5) Permit easy access to all commodity stocks--Certificates give the grain industry readier access to CCC stocks. With certificates, CCC inventory is available at prices reflective of market prices. Without certificates, CCC commodities can only be purchased after certain trigger prices are reached. These trigger prices are considerably higher than market prices. ASCS has chosen to limit this accessibility, practically speaking, to commercial enterprises since grain from inventory must be purchased in volumes of at least 10 carlots<sup>1</sup> or the remaining warehouse inventory shown in the catalog, whichever is smaller. If a certificate holder cannot, during any month, accumulate enough certificates to obtain at least 10 carlots, he/she may submit a request for less than 10 carlots. Only one such request may be submitted each month.

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<sup>1</sup>The equivalent of 10 carlots for various grains are sorghum, 19,000 hundredweight; rough rice, 18,000 hundredweight; oats, 45,000 bushels; other grains (wheat, corn, and barley), 35,000 bushels.

According to an ASCS official, accessibility was limited to facilitate administration of inventory exchange activities.

#### Certificates act as a quasi-marketing loan

In addition to the above benefits, we believe that certain benefits may be derived to the extent that certificates serve as a quasi-marketing loan. Certificates are sometimes referred to as "the poor man's marketing loan" presumably because costs are contained since certificates' use as a marketing loan is limited by the volume of certificates issued. The Secretary of Agriculture has opposed using the discretionary marketing loan program for wheat and feed grains, as allowed in the 1985 farm bill, largely because of the high costs of implementing a marketing loan program (estimated by ASCS at \$2.5 billion - \$3 billion above the budget baseline).

From a policy perspective, a marketing loan is intended to reduce commodity prices, thereby resulting in increased commodity use. Lower prices result from additional commodities being brought onto the market that otherwise would have remained in the loan program. From a farmer's perspective, a marketing loan allows repayment of his/her loan at lower rates.

Certificates allow loan repayments at market prices rather than loan rates. For corn, market prices have been considerably lower than the loan rate. In addition, there is widespread agreement that corn prices have been lowered as a result of certificates. Certificates have resulted in additional income to farmers. However, the extent to which they have or will bring about increased corn use is uncertain.

#### USE OF CERTIFICATES HELPED EASE STORAGE PROBLEMS

According to an ASCS background paper, beginning in September 1985 ASCS began closely reviewing the 1986 storage situation. Its analysis indicated that while there was sufficient overall storage space, available space was not located in areas of greatest need. In December 1985 a top ASCS official predicted massive grain buildups resulting in a critical need for storage. He said ASCS was projecting that in October 1986, 102 percent of the current grain storage space in the United States would be used for storing grain.

According to ASCS, certificates issued in the summer of 1986 were exchanged by farmers and elevator operators for 1985 loan grain. This allowed the grain to be marketed and not forfeited to CCC. Had the grain been forfeited, ASCS would have been obliged to

take possession and move the grain to approved storage facilities.<sup>2</sup> By marketing their 1985 loan grain, farmers were able to harvest and store their 1986 crop grain in a timely fashion. ASCS concluded that certificates bridged the gap between the storage deficit in the Corn Belt and the storage surplus in the Southeast.

By all accounts, the storage crisis of 1986 was not as severe as predicted and we believe that certificates may well have played a role in easing the situation. However, certificates have not solved the problems associated with storing surplus grain. By bringing additional 1985 loan grain onto the market, certificates caused farmers who would have marketed their newly harvested 1986 grain instead to place it under loan.<sup>3</sup> Without increased grain use, this grain may be forfeited at the end of the 9-month loan period. Thus storage problems may have been only temporarily abated.

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<sup>2</sup>Once grain is forfeited, the farmer is obliged to store the grain, at his/her expense, for up to 60 days if requested to do so by ASCS.

<sup>3</sup>ASCS estimates that about 82 percent of eligible corn production will go under loan in 1986. This compares with 54 and 29 percent of the eligible corn production which went under loan in 1985 and 1984, respectively.

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**SECTION 4**

**HOW DO CERTIFICATES BENEFIT FARMERS?**

**SUMMARY**

- By exchanging certificates for their commodities under price-support loans, recipients avoid the costs of storing the loan collateral. This increases farmers' returns from the loans.
  
  - Recipients who exchange certificates for their price-support loan crops may realize an additional benefit if they can market the grain at a price higher than the PCP, either immediately after exchanging the certificate or at a later time.
  
  - Recipients who sell their certificates for cash, at prices exceeding the certificates' face value, benefit by receiving more than if CCC had issued their program payments in cash.
- =====

**EXCHANGING CERTIFICATES FOR  
PRICE-SUPPORT LOAN CROPS**

Farmers who obtain price-support loans receive cash proceeds equal to the number of units (bushels or pounds) times the loan rate for their crop. For example, if the loan rate for 1986 crop-year corn in Fowler County is \$1.84 per bushel, and Farmer Smythe harvests 2,000 bushels of corn and decides to place them under loan, then Farmer Smythe's cash loan proceeds are \$3,680 (2,000 bushels times \$1.84 per bushel = \$3,680).

If farmers elect to repay a loan in cash, they must pay back the full loan rate for each unit under loan, plus interest. Farmers are then free to market or use their crops (that had been serving as loan collateral) as they desire. If farmers decide to forfeit the crop(s) when their loans mature, CCC assumes ownership of the crops that had been serving as loan collateral. By forfeiting, farmers in effect sell the crops to CCC.

From CCC's perspective, the price at which it acquires a farmer's forfeited loan collateral is the applicable price-support loan rate. However, from the farmer's perspective at the time he/she obtains the loan, the effective price received by forfeiting is not equal to the loan rate, but rather the loan rate less the cost of storing the commodity for the 9-month duration of the loan. This is because farmers are responsible for the cost of storing their crops under price-support loan; they cannot forfeit (or "sell") their crops to CCC until the end of the 9-month loan period. Therefore, from the farmer's perspective, the expected price that would be received through forfeiting the loan collateral is equal to the net loan rate--the loan rate less the cost of storage. This is illustrated in example 4.1.

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**Example 4.1**

Farmer Smythe's storage cost for corn is 3 cents per bushel per month; therefore, storing a crop for the 9-month duration of a price-support loan will cost 27 cents per bushel (3 cents per month times 9 months = 27 cents).

If Farmer Smythe puts 2,000 bushels of corn under loan under these conditions and, at the end of 9 months forfeits the crop, his effective net loan rate is \$1.57 per bushel (loan rate of \$1.84 less storage cost of \$.27 = \$1.57 per bushel). Farmer Smythe's net proceeds from the 2,000 bushels is \$3,140 (\$3,680 loan proceeds less \$540 storage cost = \$3,140).

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In deciding whether to put corn under loan after harvest, farmers compare the net loan rate with the market price at that time and how the market price is expected to change. If the market price is lower than the net loan rate at that time and appears likely to remain so, farmers are more likely to place the crop under loan.

Once a crop is under loan, farmers monitor market prices to determine whether it would be more profitable to (1) keep the crop under loan or (2) repay the loan in cash, plus interest incurred to date, and market the crop at the market price. From the farmer's perspective, the price to be received from keeping the crop under loan and then forfeiting is equal to the loan rate less the cost of remaining storage until the loan matures. The cost of storage already incurred is in effect a "sunk cost;" at that point in time, this cost has been incurred and cannot be regained whether the farmer keeps the crop under loan or repays in cash. This is illustrated in example 4.2.

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**Example 4.2**

Farmer Smythe has placed 2,000 bushels of corn under loan at a loan rate of \$1.84 per bushel; storage cost is 3 cents per bushel per month. At the end of three months, Farmer Smythe has incurred a cost of 9 cents per bushel. At this point in time, the net loan rate--the net price Farmer Smythe would receive by keeping his crop under loan and then forfeiting--is \$1.66 per bushel (loan rate of \$1.84 less six months of remaining storage costs of \$.18 per bushel = \$1.66 per bushel).

If the market price at this point in time is higher than \$1.66 per bushel (plus an amount to cover accrued interest), Farmer Smythe would find it more profitable to repay the loan in cash and market the corn at the market price. If the market price is lower than \$1.66 per bushel, Farmer Smythe would find it more profitable to keep the corn under loan.

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### Avoiding storage costs

Farmers who place crop(s) under loan and immediately exchange certificates for the loan crops do not have to incur the storage costs usually associated with a price-support loan. According to an ASCS official responsible for commodity operations, from 60 to 70 percent of all loan grain is stored in facilities on the producers' farms. The remainder of the loan grain is stored in commercial facilities at an average cost of about 33 cents per bushel per year. The cost of on-farm commodity storage is generally less than that of commercial storage.

Certificates enable farmers to avoid this cost for loan collateral exchanged with certificates. Specifically, when the PCP for the crop under loan is less than the net loan rate, farmers gain the full benefit of avoided storage costs by immediately exchanging their loan collateral for certificates and marketing the crop. They thus obtain the full loan rate for the crop. This is illustrated in example 4.3.

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**Example 4.3**

Farmer Smythe has placed 2,000 bushels of corn under loan at a loan rate of \$1.84 per bushel, for total cash loan proceeds of \$3,680. Farmer Smythe's cost of storing the corn is 3 cents per bushel per month, or \$540 for the entire 2,000 bushels for the duration of the 9-month loan. Therefore, the expected net cash return from obtaining a loan and then forfeiting is \$3,140 (loan proceeds of \$3,680 less storage cost of \$540 = \$3,140). In addition, Farmer Smythe is entitled to a payment of \$1,500 from ASCS (either a deficiency, diversion, or other payment). The market price (and the PCP) for corn in Fowler County is \$1.50 per bushel. If Farmer Smythe receives the payment from ASCS in cash, the total cash proceeds from the loan and the payment is \$4,640 (net cash from loan of \$3,140 plus \$1,500 payment = \$4,640).

If Farmer Smythe receives the \$1,500 payment in the form of a certificate, however, a greater cash return is possible. The \$1,500 certificate can be exchanged for 1,000 bushels of corn (\$1,500 divided by the PCP of \$1.50 per bushel = 1,000 bushels), or one-half of Farmer Smythe's loan collateral. If the PCP is equal to the actual local market price, Farmer Smythe can then sell the corn at \$1.50 per bushel, for a total of \$1,500 (1,000 bushels times \$1.50 = \$1,500). Thus, if Farmer Smythe uses the certificate in exchange for half his corn under price-support loan immediately after obtaining the loan, the total cash return is \$4,910, calculated as the sum of the following:

- \$1,570 net loan proceeds of the 1,000 bushels remaining under loan (\$1,840 less storage cost of \$270 = \$1,570);
- \$1,840 net loan proceeds of the 1,000 bushels exchanged for certificate (\$1,840 less \$0 storage cost);
- \$1,500 proceeds from the sale of the exchanged 1,000 bushels.

This return is \$270 greater than the return from a cash deficiency payment (\$4,910 less \$4,640 = \$270), because the certificate has enabled Farmer Smythe to receive the full loan rate for 1,000 bushels without incurring storage cost. The \$270 gain is exactly equal to the cost of storing the crop for 9 months.

Obviously, the lower the PCP, the more bushels a certificate of given face value can be exchanged for and therefore, the more storage cost that can be avoided. If, in example 4.3, the PCP in Fowler County was \$1.00 per bushel instead of \$1.50, then Farmer Smythe's \$1,500 certificate could be exchanged for 1,500 bushels (instead of 1,000). If Farmer Smythe marketed the corn at \$1.00 per bushel, total returns would be \$5,045, calculated as:

- \$785 net loan proceeds of the 500 bushels remaining under loan ( $\$920$  less storage cost of  $\$135 = \$785$ );
- \$2,760 net loan proceeds of the 1,500 bushels exchanged for certificate ( $\$2,760$  less \$0 storage cost); and
- \$1,500 proceeds from sale of exchanged 1,500 bushels.

This return is \$135 greater than the return Farmer Smythe realized with a PCP of \$1.50 ( $\$5,045$  less  $\$4,910 = \$135$ ). This is because, with the lower PCP, the certificate has enabled Farmer Smythe to receive the full loan rate for an additional 500 bushels of corn without having to incur storage expense. The \$135 additional gain is exactly equal to the cost of storing the extra 500 bushels for 9 months.

Farmers may realize the benefit of avoided off-farm storage cost even if their loan collateral is stored on their farm. By using or marketing the exchanged crops, farmers free on-farm storage space, which reduces the likelihood of incurring costs for commercially storing the subsequent year's harvest. This is important because, in times of heavy surplus, storage space may be limited, and CCC may have difficulty finding commercial storage space for forfeited crops.

When the PCP is higher than the net loan rate, farmers can still benefit from using certificates. As in the previous examples, farmers can calculate this benefit by comparing (1) the return from using the certificate in exchange for loan collateral with (2) the return they could earn otherwise. In this case, however, because the PCP is higher than the net loan rate, without certificates farmers could earn more by marketing their crop at the PCP (market price) than by placing the crop under loan. This is illustrated in example 4.4.

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**Example 4.4**

Farmer Davis, in Bluff County, like Farmer Smythe in example 4.3, has 2,000 bushels of corn eligible to be placed under loan at \$1.84 per bushel. Farmer Davis has also received a \$1,500 certificate, but the PCP in Bluff County is \$1.70 per bushel. This is higher than Farmer Davis' net loan rate (storage costs for corn are 3 cents per bushel per month, for a net loan rate of \$1.57 per bushel).

If Farmer Davis chooses, she can place 882 bushels under loan and exchange them immediately for the \$1,500 certificate (\$1,500 divided by \$1.70 = 882 bushels). For these bushels, Farmer Davis receives the full loan rate (because storage cost is avoided), for a total of \$1,623 (\$1.84 per bushel times 882 bushels = \$1,623). After exchanging the certificate for these bushels, Farmer Davis can market the 882 bushels for about \$1,500 (882 bushels times \$1.70 = \$1,500). Farmer Davis can gain more from the remaining 1,118 bushels by marketing them at \$1.70 per bushel than by placing them under loan and receiving the net loan rate of \$1.57 per bushel; the return from this marketing would be about \$1,901 (1,118 bushels times \$1.70 per bushel = \$1,901). The total return from the 2,000 bushels would be about \$5,023, as follows:

- \$1,623 loan proceeds of the 882 bushels exchanged for certificates;
- \$1,500 sales proceeds of the 882 exchanged bushels; and
- \$1,901 sales proceeds from sale of remaining 1,118 bushels.

Farmer Davis compares the return available from using the certificate to the return available by simply marketing the crop without using the certificate. Because the PCP is greater than the net loan rate, the greatest return Farmer Davis can earn without using the certificate is marketing the crop at the PCP, or \$3,400 (2,000 bushels times \$1.70 per bushel = \$3,400). Thus, by using the certificate Farmer Davis would gain \$1,623 (\$5,023 less \$3,400 = \$1,623).

As discussed below, certificate recipients who are in the above situation--where the PCP is higher than the net loan rate for their crops under loan--may benefit by selling the certificates for cash. This is because farmers located elsewhere may be in a situation where the PCP for their crops under loan is less than their net loan rate. Therefore, they would be willing to purchase certificates at prices that would give the original recipients a greater return than using the certificates. For example, Farmer Davis of example 4.4 should be willing to sell her \$1,500 certificate at a price greater than \$1,623. Because Farmer Smythe of example 4.3 can earn \$270 from using that certificate, he could pay up to \$1,770 to purchase it.

#### **MARKETING CROPS EXCHANGED FOR CERTIFICATES**

Certificates enable farmers to take advantage of market prices for the loan crops they exchanged in two ways.

First, farmers may realize a marketing gain on price-support loan collateral exchanged for certificates if the actual local market value of their crops is higher than the PCP. The PCP in effect is the "price" at which farmers exchange certificates for their crops under loan. If farmers can actually market the crop for a higher price, then the certificates have provided them with additional benefits. This is illustrated in example 4.5.

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**Example 4.5**

With the PCP for corn in Fowler County at \$1.50 per bushel, Farmer Smythe exchanges a \$1,500 certificate for 1,000 bushels of corn under loan. The actual local market price for corn in Fowler County is \$1.55 per bushel. Farmer Smythe markets the 1,000 bushels of corn at this price, for total cash proceeds of \$1,550 (1,000 bushels times \$1.55 per bushel = \$1,550). This is \$50 greater than the exchange value that CCC placed on the corn--in other words, \$50 greater than the amount of Farmer Smythe's certificate.

This \$50 gain results from the fact that the PCP does not reflect the actual local market price for corn. The \$50 gain is in addition to the \$270 benefit (avoided storage cost) that Farmer Smythe obtains from the certificate.

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Second, certificates enable farmers more flexibility in marketing their crops. After exchanging certificates for their price-support loan collateral, farmers can continue to store the commodities in anticipation of price increases, and sell when the price is highest. (Of course, farmers are assuming some risk in this situation, because the market price could decline.)

Without certificates, the only way that farmers can take advantage of price increases for their crops under loan is to repay in cash at the full loan rate. As stated earlier, farmers would not find it profitable to do this unless the market price rose above the net loan rate plus accrued interest (otherwise, it would be more profitable to forfeit the crop to CCC at the end of 9 months). With certificates, farmers can benefit when the local market price for their crop increases above the PCP by more than the amount of storage cost incurred--even though it remains below the net loan rate plus accrued interest at that time. Example 4.6 illustrates this relationship.

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**Example 4.6**

Farmer Smythe has used a \$1,500 certificate in exchange for 1,000 bushels of corn under loan. The PCP of \$1.50 per bushel accurately reflects the local market price. The cost of storage is 3 cents per bushel per month, or 27 cents per bushel over the 9-month duration of the loan. Instead of marketing the crop immediately, Farmer Smythe stores it in anticipation of a price increase.

After three months, the local price increases to \$1.65 per bushel, an increase of 15 cents per bushel. The cost of storing the crop up to this point is 9 cents per bushel (three months times 3 cents per bushel = 9 cents). Therefore, Farmer Smythe's total cost for the corn is \$1.59 per bushel (\$1.50 PCP plus \$.09 storage = \$1.59), or \$1,590 for the entire 1,000 bushels. The net loan rate at this point in time is \$1.66 per bushel (\$1.84 less \$.18 for remaining six months of storage = \$1.66). If Farmer Smythe markets the 1,000 bushels at the market price of \$1.65 per bushel, the cash proceeds are \$1,650 (1,000 bushels times \$1.65 = \$1,650). This is \$60 more than Farmer Smythe's cost (\$1,650 less \$1,590 = \$60.)

Without certificates, Farmer Smythe would not have realized this gain because he would have gained more by leaving the corn under loan. This is because, although the market price increased, it did not increase to a level exceeding the net loan rate plus accrued interest, and therefore the corn would have remained under price-support loan.

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## **SELLING CERTIFICATES FOR CASH**

As mentioned previously, the benefits of exchanging certificates for price-support loan crops (avoided storage costs) make the certificates valuable to farmers who have such loans. This creates a demand for certificates at prices in excess of certificates' face values by farmers who do not receive enough certificates to exchange for their entire quantity of loan collateral. As long as the price they pay is no greater than the benefits they realize by using the certificate, farmers have an incentive to purchase the certificates. This is illustrated in example 4.7.

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**Example 4.7**

Above, Farmer Smythe realized a gain of \$270 (equal to the amount of avoided storage costs) by using the \$1,500 certificate in exchange for corn under price-support loan. Farmer Jones is in the exact same circumstances as Farmer Smythe, except that Farmer Jones did not receive any certificates. Farmer Jones wishes to obtain them to realize the benefit of avoiding storage costs.

To maximize his returns, Farmer Jones would be willing to pay up to, but no more than, \$270--the amount to be gained from using certificates--to obtain certificates with a \$1,500 face value. In other words, Farmer Jones would pay up to \$1,770 for certificates whose face value totaled only \$1,500. If Farmer Jones paid \$1,650 for the certificates (\$150 more than face value), he would still gain \$120 from certificates. In this case, Farmer Jones would have paid a premium of 10 percent ( $\$150 \div \$1,500 = .10$ , or 10 percent).

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Because certificates are readily transferrable from one person to another, recipients who have outstanding price-support loans may realize a greater return from their certificates by selling them for cash rather than exchanging them for their loan collateral. In general, farmers facing a situation where (1) the PCP is less than the net loan rate for their crop under loan and/or (2) the actual market price is greater than PCP will find it most profitable to exchange certificates for their price-support loans. Farmers in such circumstances will tend to "bid" for the certificates of other certificate holders; depending on the prices they offer, the certificate holders may find it more profitable to sell their certificates than to exchange them for their own loan collateral. This is shown in example 4.8.

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**Example 4.8**

Farmer Chase has placed 1,000 bushels of wheat under loan in Fowler County at a loan rate of \$2.30; storage cost is 3 cents per bushel per month, or \$.27 per bushel over the entire 9-month loan. The PCP for wheat in Farmer Chase's county is \$2.00 per bushel.

Farmer Chase receives a certificate with a \$1,500 face value. This certificate can be exchanged for 750 bushels of Farmer Chase's wheat under loan ( $\$1,500 \text{ divided by } \$2.00 \text{ PCP} = 750 \text{ bushels}$ ). Using the certificate for this purpose, Farmer Chase would realize a gain (avoided storage cost) of about \$203 (750 bushels times \$.27 storage cost = \$203).

However, Farmer Jones, with 1,000 bushels of corn under loan and no certificates, wishes to purchase certificates to exchange for the corn. Because Farmer Jones would realize a benefit of \$270 by using a \$1,500 certificate, he is willing to pay up to \$1,770 to purchase them. Farmer Jones offers Farmer Chase \$1,745 for the certificate with face value of \$1,500, representing a premium of 16 percent ( $\$245 \text{ divided by } \$1,500 = .163$ ). In this circumstance, Farmer Jones would still realize a \$25 benefit by purchasing and using certificates and exchanging them for the loan collateral ( $\$270 \text{ benefit less } \$245 \text{ premium} = \$25$ ). In addition, Farmer Chase would realize a gain of \$42 by selling the certificate at that price instead of exchanging it for the wheat under loan ( $\$245 \text{ premium less } \$203 \text{ avoided storage cost}$ ).

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In addition to selling certificates to other farmers or grain companies, recipients can, after a certain period, exchange them for cash from CCC. For those certificates issued as payments for 1986 crops, CCC does not provide cash equal to the face amount of the certificates: 4.3 percent is deducted from the face value to meet the requirements of the Balanced Budget and Deficit Control Act of 1985 (also known as the Gramm-Rudman-Hollings Act). Certificates issued as payments for 1987 crops are exchanged for full face value. Because evidence indicates that recipients have thus far been able to sell certificates at prices exceeding face value to other buyers, there is little incentive to exchange certificates for cash from CCC.

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SECTION 5

HOW DO CERTIFICATES BENEFIT THE GRAIN INDUSTRY?

SUMMARY

- Certificates provide grain companies with greater marketing opportunities. The use of certificates makes grain more "liquid"; i.e., more readily accessible to grain companies for marketing.
- PCPs may be set lower than market prices, enabling grain companies (as well as farmers) to capitalize on the differentials between PCPs and actual market prices.
- Grain companies serve as intermediaries in buying and selling certificates. This enables them to profit from these transactions.

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## **CERTIFICATES GIVE THE GRAIN INDUSTRY GREATER MARKETING OPPORTUNITIES**

According to officials of Cargill, Incorporated, one of the nation's largest grain companies, certificates have created additional liquidity in markets that have been distorted by government price and acreage controls. Merchants, like Cargill, gain logistical control and marketing opportunities from this increased liquidity. In other words, commodities which are removed from marketing channels as a result of being in the government loan program or in government inventories may now be exchanged for certificates at market prices.

## **CERTIFICATES PROVIDE OPPORTUNITIES TO PROFIT ON DIFFERENTIALS BETWEEN PCPs AND ACTUAL MARKET PRICES**

Certificates can be exchanged for grain from CCC inventories based on the PCP (plus, since December 1986, an additional in-handling charge). To be available for certificate exchanges, grain must be listed in a CCC catalog. Although ASCS attempts to estimate local market prices with its PCPs, there may be variations between PCPs and actual market prices. When this occurs, opportunities exist for capitalizing on the differential. For example, an October 1986 analysis published by Sparks Commodities, Inc.,<sup>1</sup> stated that barley could be purchased at CCC feed barley market prices but sold at a higher price for malting barley. Similarly, when certificates were first made available, high protein spring wheat was selling at high premiums. However, the CCC exchange price for such wheat was considerably lower, creating considerable value for certificates. The Sparks analysis also noted that although USDA was attempting to eliminate major disparities, it would not be easy to avoid all of them.

Similarly, ASCS has the enormous task of establishing, on a daily basis, PCPs in over 3,000 counties and 7,000 warehouse locations for all of its commodities. Although it has made a number of modifications so that PCPs will more accurately reflect actual market prices, there are still instances where PCPs are lower than market prices in certain areas. In such instances, both grain companies and farmers can benefit by selling certificates at a premium and/or using certificates to obtain grain at the PCP and then reselling it at a higher price.

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<sup>1</sup>Sparks Commodities, Inc., is an agricultural business consulting firm which performs economic and policy-related analyses for its clients.

## GRAIN COMPANIES CAN PROFIT BY ACTING AS INTERMEDIARIES IN TRADING CERTIFICATES

Certificates can be bought and resold on the open market. Grain companies (larger ones in particular) have the resources to buy large volumes of certificates in one area of the country and resell them elsewhere for a profit. For example, certificates can be bought from wheat farmers in the Plains states (wheat farmers are less likely to exchange certificates for wheat under loan since wheat loan rates and wheat PCPs are about the same) and sold to corn farmers in the Corn Belt who can pay premiums and still profit from exchanging the certificates for corn under loan.

All six of the grain company and cooperative officials we interviewed said they acted as intermediaries in buying and reselling certificates. An official of Peavey Grain--a major grain company headquartered in Minneapolis, Minnesota--said that through mid-January 1987, his company was involved in certificate sales totaling about \$400 million. Most of the grain companies said they provided certificates as a service to their customers. Several observed that if their customers could not buy the certificates from them, the customers might move their business to a company which could provide certificates.

Officials from two grain companies, Cargill, Incorporated, and Louis Dreyfus Corporation, stated that their companies derived little profit in reselling certificates. They said certificates were typically resold for about 1 to 2 percent more than what they had paid for them. According to the Cargill official, this was enough to defray administrative costs related to handling the certificates.

### Profits from substituting loan collateral

One of the more publicized practices resulting in profits from price differentials involved a provision that enabled farmers to substitute loan grain with grain bought in counties where differentials between loan rates and PCPs were greater. Farmers then exchanged certificates for their corn under loan with the substituted grain. Reportedly, certificates sold for as much as 135 percent of their face value and, according to allegations in the media, some grain companies made substantial profits by reselling certificates for large premiums.

We discussed certificate use with ASCS County Executive Directors in six top corn-producing and five top wheat-producing counties.<sup>2</sup> Several Of the county directors said they believed some

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<sup>2</sup>According to Chicago Board of Trade data, 5 of the 6 corn counties and all 5 of the wheat counties were among the top 11 corn-producing and wheat-producing counties in crop year 1984.

elevator operators had made substantial profits by acting as brokers in exchanges for substituted loan grain.

Effective October 31, 1986, ASCS no longer permits farmers who substitute their loan collateral to exchange certificates for the substituted collateral. According to a USDA news release, this provision had helped make storage space available for the 1986 price support program during a period of storage scarcity. However, the storage situation had abated to the point where the provision was no longer necessary.

Since this practice has been disallowed, certificate premiums have declined. In January 1987, certificate premiums were about 5-10 percent of the face value. This would indicate that opportunities for substantial profits from exchanging certificates for substituted grain had been foreclosed. We are reviewing, in detail, the costs associated with certificate exchanges for substituted grain and expect to report on this issue later this year.

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**SECTION 6**

**WHY HAVE CERTIFICATES TRADED AT PREMIUMS?**

**SUMMARY**

- Because of the benefits they confer, as illustrated in Sections 4 and 5, farmers and others are sometimes willing to pay more than the face value of certificates in order to obtain them.
  
  - The prices at which certificates trade depends upon the supply of certificates available to be traded and the existence of a demand for certificates by farmers, grain companies, and others.
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## WHAT DETERMINES THE PRICES AT WHICH CERTIFICATES TRADE?

As with other negotiable goods, the price at which certificates trade depends upon two factors: the supply of certificates available to be traded and the existence of a demand for certificates by farmers, grain companies, or other parties. The supply of certificates available for trade depends upon the overall quantity issued by USDA as well as the recipients' willingness to trade. The demand for certificates--and the recipients' willingness to trade--is driven by the benefits they provide, to farmers, the commodity industry, and others, as explained in the preceding sections.

Both the supply and demand for certificates are subject to change over time. At any given point in time, the price at which certificates trade represents the price at which the dollar value of certificates demanded equals the dollar value of certificates which certificate holders are willing to sell.

As the discussion in the previous sections shows, the exact amount of the benefit that can be realized by exchanging certificates for price-support loan collateral varies with each farmer's circumstances. The important variables that go into the calculation of this benefit include (1) the cost of storage per bushel that can be avoided, (2) the number of bushels that can be exchanged for a certificate of given face value (which in turn depends on the PCP for the crop in the farmer's county), and (3) the amount, if any, by which the actual local market value for commodities under loan exceeds the PCP. The higher the values of each of these variables, the greater the benefits from certificate use.

Not only do these variables vary among crops and geographic areas, they also change over time. The fact that storage costs, as previously explained, cannot be regained once incurred causes the net returns available from exchanging certificates for price-support loan collateral to decline over the course of the loan. Stated another way, the value of this variable changes over time. PCP's are based on observed market prices, and therefore can change daily. This means that the number of bushels that can be exchanged with a certificate of given dollar value, as well as any discrepancies between PCP's and actual local market values, varies both geographically and over time.

Consequently, the particular crop and/or geographic area in which certificates provide the greatest returns can vary. Generally, if for two crops (with equal per-bushel storage costs) conditions are such that the PCP's are less than the respective net loan rates, certificates will tend to be exchanged for whichever crop has the lowest PCP. This is because a certificate of given face value can be exchanged for more of the crop with the lowest PCP, enabling the greatest storage savings.

Available data suggest that PCP's have tended to be lower for corn than for other commodities. Other things being equal, this means that the return from exchanging certificates for corn under loan exceeds the return from exchanging them for wheat or other commodities under loan. Most certificate exchanges have been for corn loan collateral.

The exchanges of certificates for price-support loan collateral has been concentrated in grains such as corn, wheat, and other feed grains. Compared to the amount of certificates exchanged for grains, there has been less activity in rice and cotton. This may be due in part to the presence of "marketing loans" for those crops. Under provisions of the Food Security Act of 1985, farmers with cotton and rice price-support loans can repay their loans in cash at prices less than the loan rate.<sup>1</sup> Because this provision in effect allows farmers with cotton or rice price-support loans to realize the full loan rate without having to incur storage costs or forfeit, the effect is the same as exchanging certificates for the loan collateral. Thus, there may be less incentive to exchange certificates for cotton and rice loan collateral than for wheat or feed grains.

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<sup>1</sup>Farmers with rice loans can repay in cash at the prevailing world market price for rice. Farmers with cotton loans can repay in cash at the higher of (1) the prevailing world market price for cotton or (2) 80 percent of the cotton price-support loan rate.

**BASIS FOR COST ESTIMATES****CERTIFICATES' EFFECTS ON NET  
PRICE-SUPPORT LOAN OUTLAYS**

The effect of certificates on net loan outlays cannot be directly measured because many factors affect loan activity. Nevertheless, estimates can be made based on assumptions about how certificates are used and the likely market responses that use will induce. Different assumptions yield different estimates. Under a wide range of assumptions, net loan outlays are likely to increase by more than cash payments decline. In some cases, however, this total outlay increase may not be observed until the year after the certificates are issued.

At present, we do not have complete data on how certificates issued to date have been used or on total loan activity for 1986 crops. About 45 percent of the certificates issued have not yet been used. This makes measurement of the ultimate effect on net loan outlays of all the certificates issued particularly difficult. CCC loan records will eventually show for each crop (1) total loan placements, (2) total loan repayments, and (3) the quantity of grain under loan that is forfeited. Nonetheless, even then we will not be able to compare 1986 crop year loan activity with loan activity in prior years because there can be many other factors besides certificates that affect net loans.

To adjust for these other factors, we would need to hold them constant and measure the difference in net loan activity solely due to certificates. However, we do not know how many loans would have been made in the absence of certificates. Nor do we know how many individual producers would have settled loans that would have been made even without the issuance of certificates (how many would have repaid in cash and how many would have forfeited). Therefore, we must estimate the increase in net loan outlays from available data about how certificates have been used and assumptions about both farmers' actions in the absence of certificates and the market responses that certificate use will induce.

As discussed in Section 2, calculating the increase in net loan outlays resulting from a given amount of certificates used depends on (1) the amount of recycling that occurs, (2) the average loan-rate-to-PCP ratio for each crop exchanged, and (3) the portion of certificates used in exchange for each crop. We used available data and analyses to estimate these values. Using different average loan-rate-to-PCP ratios or recycling percentages will yield different estimates.

Recycling percentage

On the basis of our analysis of how certificates are likely to be used and market conditions, and our review of other analyses, we believe that the recycling percentage associated with certificates exchanged to date is likely to be from 90 to 100 percent. In many cases the most profitable use of certificates has been in exchange for crops under loan that in the absence of certificates would not have been placed under loan. When this was done, the recycling percentage was 100.

To the extent that certificates have been exchanged for crops under loans that otherwise would have been forfeited or in exchange for CCC stocks, less than 100 percent recycling might occur. For recycling to be less than 100 percent under current market conditions, certificate use would probably have had to cause market prices to fall, because preferred holdings of free stocks are unlikely to rise given the current low prices and large inventories, especially for corn. Lower market prices may lead to increased crop use, either domestic or exported. The more that prices fall and the more that demand increases in response to a price decrease, the lower the recycling percentage will be.

A preliminary analysis by the Congressional Budget Office suggests that the recycling percentage for corn is likely to be at least 90 percent. This analysis shows that with an assumed 10-cents-per-bushel decline in corn price due to certificate use and a price elasticity of demand of  $-.35$ , the recycling percentage will be about 95.<sup>1</sup> If either the elasticity estimate or the certificate-induced price decline is doubled, the recycling percentage is about 90.<sup>2</sup>

In an unpublished study, USDA's Economic Analysis Staff (EAS) estimated the effects of certificate use on outlays under four sets

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<sup>1</sup>The price elasticity of demand is a commonly used measure of the responsiveness of demand to price changes. It measures the percentage change in quantity demanded resulting from a one percent change in price.

<sup>2</sup>Because fewer certificates have been used for wheat, the effect of certificate use on wheat prices is likely to have been smaller (in fact, there may have been none). This suggests that the recycling percentage for wheat may have been even higher.

of assumptions.<sup>3</sup> In three sets EAS assumed a recycling percentage of 100, and a recycling percentage of 80 in the fourth. Although the analysis does not say what percentage EAS believes is most likely, it concludes that the most probable effect of certificates is to increase outlays. Given our estimates of average loan-rate-to-PCP ratios and the distribution of exchanges between corn and wheat, a recycling percentage of about 91-92 percent would produce an outlay increase in the range EAS believes most likely.

On the other hand, an ASCS analysis concludes that the recycling percentage will not be large enough for certificate use to increase total outlays. The analysis concludes, on the basis of data showing the share of eligible 1986 grain actually placed under loan to date, compared to prior years, that recycling will not be high enough to lead to an increase in total CCC outlays. However, the ASCS analysis does not present an estimate of what the recycling percentage might be.

Other USDA data suggest that any certificate-induced increase in domestic or export corn use will not be large enough to prevent huge forfeitures to CCC. USDA's March 1987 World Agricultural Supply and Demand Estimates forecasts both domestic use and exports of corn will increase only slightly during the 1986-87 marketing year (September through August). Total ending stocks are forecast to increase by some 1.5 billion bushels over year-earlier levels, and CCC inventory is forecast to rise by some 954 million bushels.

#### Average loan-rate-to-PCP ratio

We estimate that the weighted average loan-rate-to-PCP ratio for certificates exchanged through January 1987 is about 1.144 to 1.212. This weighted average is based on estimated ratios of about 1.19 to 1.27 for corn and about 1.00 to 1.02 for wheat, and a distribution of certificate use of 77 percent for corn and 23 percent for wheat. These estimated ratios are based on estimated average PCPs of \$1.45 to \$1.55 per bushel for corn and \$2.25 to \$2.30 per bushel for wheat, and average loan rates of \$1.84 per bushel for corn and \$2.30 per bushel for wheat. The certificate

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<sup>3</sup>This analysis was done to estimate the effects from the December certificate issuance only. However, the recycling percentage is likely to be the same for all certificate issuances.

distribution is based on data for exchanges through February 25, 1987.<sup>4</sup>

Our analysis relies on estimates of the average PCPs at which certificates have been exchanged because ASCS does not have accurate data on these measures. Nor can average PCPs be directly derived from data on average market prices (which are available monthly) because in some counties the PCPs have been below market prices, and a disproportionate share of certificate exchanges have likely occurred in such places because of increased profit opportunities.<sup>5</sup> Therefore, we selected ranges on which to base our analysis that we believe are likely to bound the actual values. We chose these ranges after reviewing limited available data on market prices and PCPs. We then discussed our proposed ranges with an ASCS analyst who agreed that they were appropriate and reasonable for our analysis.

Average loan-rate-to-PCP ratio  
for outstanding certificates may  
differ from exchanged certificates

The loan rate to PCP ratio might be lower or higher for the certificates not yet exchanged. For instance, this value might be lower because:

(1) If grain prices follow their typical pattern, corn prices can be expected to rise during the marketing year (September-August). This will not only lower the loan-rate-to-PCP ratio for corn, but may also reduce the share of certificates used for corn and increase the share used for wheat, which has a lower loan rate to PCP ratio.

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<sup>4</sup>To simplify the analysis, we treated the certificate redemptions as being distributed between only corn and wheat, which together account for 88 percent of actual redemptions. We divided the remainder between corn and wheat in the same ratio as actual redemptions have been divided between these two crops. This simplification is unlikely to have a large effect on the average loan-rate-to-PCP ratio because the ratios for other crops are not substantially different than the ratios for corn and wheat.

<sup>5</sup>Before it was prohibited by USDA, some farmers substituted grain under loan in their own counties for grain located in counties with low PCP's in order to increase their profit from certificate use. This was sometimes known as "long distance PIK." Even though long-distance PIK is no longer allowed, certificates can move freely to the location where they can be most profitably used.

(2) PCPs in each county are now determined on the basis of prices in two terminal markets. However, a portion of the certificates already exchanged were exchanged when PCPs were set based on the price at only one terminal market. This policy change raised the PCP in some counties, while keeping it unchanged in others, thereby raising the average PCP (and lowering the loan-rate-to-PCP ratio). As a result, because PCPs now reflect market prices more accurately, the average loan-rate-to-PCP ratio at which the remaining certificates are exchanged may be lower than the average PCP for those already exchanged, even if market prices do not change.

On the other hand, the average loan-rate-to-PCP ratio might be higher for the certificates not yet exchanged because:

(1) When certificates were first issued, they were largely unfamiliar and the most profitable ways to use them were not clearly understood. As a result, the increase in net lending outlays resulting from their use in the first few months may have been less than what would have occurred if all certificates had been most profitably used. Over time, however, many articles have been written to advise farmers on their best opportunities, which are generally the certificate uses that most increase net lending outlays. Therefore, with unchanged PCPs, the average loan-rate-to-PCP ratio might be higher for the certificates not yet exchanged than it has been to date.

(2) An active, efficient market for trading certificates has developed, lowering the transaction cost incurred in trading certificates. This, too, will help assure that certificates are used in the most profitable way, which will generally raise the average loan-rate-to-PCP ratio.

Consequently, we cannot tell whether the average loan-rate-to-PCP ratio will be higher than, lower than, or about the same as it has been so far. However, unless the average loan-rate-to-PCP ratio for the remaining certificates is considerably lower than it has been so far (or the recycling percentage is lower), total outlays will still be likely to have risen from certificates when all the certificates issued have been used.

Combining estimated recycling percentages  
and average loan-rate-to-PCP ratios

Values for the loan-rate-to-PCP ratio (1.14) and the recycling percentage (90) that represent the low end of our most probable range (see table 2.2) yield an estimate that total outlays will increase by about 3 percent of the certificate face value for those already used. The outstanding certificates represent about 45 percent of those issued. Therefore, unless the increase in net

lending outlays resulting from their use is at least 3.7 percent below the face value of those certificates, when all issued certificates have been used we will still find that certificates increased total outlays.

If the recycling percentage is 90, the average loan-rate-to-PCP ratio for the outstanding certificates will have to fall to about 1.07 to produce this result. If the actual values for the recycling percentage and the average loan-rate-to-PCP ratio for certificates already used are toward the middle or high end of our most probable range, then the average loan-rate-to-PCP ratio for the outstanding certificates will have to fall even farther. For values representing the high end, this ratio will have to fall to about .74. Consequently, if for some crops the PCPs remain below the loan rates, it is likely that analysis based on all the certificates issued would also suggest that certificates have caused net loan outlays to increase by more than cash program payments decline.

Table 1 below shows, for various combinations of recycling percentages and loan-rate-to-PCP ratios, the increase in net loan outlays that will result from use of a \$1000 certificate. Going down any column shows that the increase gets smaller as the recycling percentage falls. Going across any row shows that the increase gets larger as the loan-rate-to-PCP ratio gets larger.

At any place in table 1, a value above \$1000 means that the increase in net loan outlays will exceed the \$1000 saving in cash payments, implying an increase in total outlays. Similarly, a value below \$1000 means that the increase in net lending outlays is less than the \$1000 saving in cash payments, implying a decrease in total outlays.

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Table I.1: Increase in Net Lending Outlays Resulting from  
Use of a \$1,000 Certificate (in dollars)

<u>Recycling Percentage</u>	<u>Loan-Rate-to-PCP Ratio</u>						
	<u>1.00</u>	<u>1.05</u>	<u>1.10</u>	<u>1.15</u>	<u>1.20</u>	<u>1.25</u>	<u>1.30</u>
100	1000	1050	1100	1150	1200	1250	1300
95	950	997.50	1045	1092.50	1140	1187.50	1235
90	900	945	990	1035	1080	1125	1170
85	850	892.50	935	977.50	1020	1062.50	1105
80	800	840	880	920	960	1000	1040
75	750	787.50	825	862.50	900	937.50	975

Source: GAO computations

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As table 1 shows, if all certificates are exchanged for crops at the loan rate, net loan outlays will rise at most by the value of the certificates. With less than 100 percent recycling, net loan outlays will increase less than program payments decline. This suggests that if USDA required certificates to be exchanged at the applicable loan rates rather than PCPs, the increase in net loan outlays would about equal, or be less than, the decline in program payment outlays. But with PCPs below loan rates for some crops, net loan outlays from certificate use may rise, depending on the recycling percentage, by more than the decline in program payment outlays. The higher the loan-rate-to-PCP ratio, the lower the recycling percentage has to be to achieve this result.

Interpolating from table 1 suggests that with a loan-rate-to-PCP-ratio of about 1.14, certificate use will cause CCC's net loan outlays to rise more than program payments decline if the recycling percentage is at least 87. With a loan-rate-to-PCP ratio of 1.21, this will occur if the recycling percentage is at least 83.

As discussed above, it is likely that by the time all induced activity occurs, the recycling percentage will be higher than the 83 to 87 percent level that would make certificate-induced net loan outlays approximately equal to the outlays avoided by not making cash payments. For example, the price elasticity of demand would have to be far higher than the assumed value in the CBO study to yield a recycling percentage that low.

#### CERTIFICATES' EFFECT ON STORAGE COSTS

Certificates reduce storage costs when they are (1) exchanged for CCC-owned inventory, (2) exchanged for crops under outstanding farmer owned reserve (FOR) loans, or (3) exchanged for crops under regular 9-month loans that farmers, in the absence of certificates, would have obtained and then forfeited to CCC. It is difficult to estimate the precise storage savings. For reasons discussed below, we do not estimate any appreciable long-run storage savings from certificates. Using a range of assumptions, we estimate that short-run savings associated with certificates exchanged through December 1986 could be from \$169 million to \$253 million.

#### Long-run storage savings

In the long run, CCC storage costs will be reduced only if CCC-owned stocks are reduced. Unless producers, grain companies or others increase their preferred holdings of free stocks, this will happen only to the extent that use increases due to price reductions. As noted in the previous section, USDA forecasts a slight increase in domestic use for corn, and a decline in exports, from year-earlier levels.

It is difficult to determine the role played by certificates on any commodity price changes, as well as the role of price changes on consumption, because many other factors also influence those variables. However, our estimates of the likely recycling percentages and USDA's supply and demand forecasts suggest that certificates will not significantly contribute to a long-run reduction in CCC inventories. For reasons discussed above, we believe that the recycling percentage associated with exchanged certificates is probably at least 90. (This means that, for every 100 bushels of grain exiting CCC's loan program through certificate exchanges, at least another 90 bushels will be placed under loan; the 90 or more bushels will likely be forfeited to CCC because market conditions have changed only enough to absorb the difference of 10 or fewer bushels. Therefore, the net reduction in CCC's inventory will be 10 bushels or less.) For crops for which certificate use does not reduce prices, 100 percent recycling is more likely and, therefore, no change in long-run inventory--and storage costs--will occur.

An ASCS analysis states that USDA will save \$300 million to \$500 million in storage and transportation costs during fiscal years 1986 and 1987 because of reduced 1985-crop loan forfeitures due to certificates. However, this estimate does not account for recycling. As previously discussed, certificates reduce loan grain when they are exchanged for loan crops, but indirectly cause an increase in the number of bushels under loan. As a result, in the long run CCC's inventory of forfeited crops may decline only slightly, if at all.

#### Short-run storage savings

Certificates may have reduced CCC's short-run storage costs. Although exchanges of certificates for CCC-owned stocks may lead to CCC's acquisition of an equal amount of grain (beyond what it would have acquired without certificates), there can be a span of several months between the time that grain exits CCC's inventory through certificate exchanges and the time that the certificate-induced forfeitures occur. For example, certificates could be exchanged for crops under 1985 and prior-year loans, and exchanged for CCC-owned inventory, beginning in June 1986. Regular loans for 1986 crops will not mature--and, therefore, farmers cannot forfeit the crops--until 9 months after the loan was made, generally beginning in March 1987. During this time CCC's storage costs will be reduced, even if in the long run monthly storage costs return to the level they would be without certificates.

It is difficult to estimate the amount of storage costs avoided because (1) it is not known with certainty how much of the 1985 and prior-year crops, in the absence of certificates, would have been forfeited to CCC, (2) if the forfeitures occurred, how

CCC would have handled storage problems in areas such as the Corn Belt where available storage was limited, (3) the average time span of avoided storage (the time span between the point when bushels exit CCC inventory through certificate exchanges and the point when corresponding bushels enter CCC inventory as a result of certificates), and (4) the amount of time that CCC-owned commodities, exchanged for certificates, would have remained in CCC inventory in the absence of certificates. Using a range of assumptions, we estimate short-run storage savings from certificates exchanged through February 1987 of about \$169 million to \$253 million. However, the actual savings could be more or less than this range.

About 544.4 million bushels of grain,<sup>6</sup> 14 million hundredweight of rice, and 3.4 million bales of cotton under 1985 and prior-year crop loans were settled with certificates through December 31, 1986 (the last date for which we had data showing the distribution of certificate use among loans from various crop-years). About 183 million bushels of CCC-owned grain and 25.2 million hundredweight of CCC-owned rice had been exchanged for certificates through February 1987.

Storage rates applicable to 1986-87 were provided to us by ASCS officials. These rates are about 32-33 cents per bushel per year for grains, about \$1.08 per hundredweight of rice per year, and about \$18.00 per bale of cotton per year. Assuming that (1) 100 percent of the 1985 and prior-year grain would have been forfeited in the absence of certificates and (2) an average of 6 months avoided storage, then short-run savings would be about \$125.4 million. Assuming the same average 6 months avoided storage, the savings from bushels exchanged for CCC-owned commodities would be about \$43.2 million, for a total 6-month savings of about \$169 million. If the average avoided storage time span is assumed to be 9 months, then the estimated total savings rises to about \$253 million.

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<sup>6</sup>Corn, wheat, barley, oats, rye, soybeans, and grain sorghum.

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